

# CAREER & TECHNOLOGY STUDIES

## INFORMATION PROCESSING

### GUIDE TO STANDARDS AND IMPLEMENTATION

INTERIM 1994  
(SEPTEMBER 1994 – SEPTEMBER 1997)  
INCLUDES 1996 UPDATES

**Alberta**  
EDUCATION

CURRICULUM STANDARDS BRANCH

QA  
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CURRGDHT



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This document was prepared for:

<i>Administrators</i>	✓
<i>Counsellors</i>	✓
<i>General Audience</i>	
<i>Parents</i>	
<i>Students</i>	
<i>Teachers</i>	✓



Program/Level: Career and Technology Studies/Secondary

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Every effort has been made to acknowledge original sources and comply with copyright regulations. Please notify Alberta Education if there are cases where this has not been done. Shaded areas within this document have been approved for optional implementation. Assessment conditions and criteria are in draft form and will be validated 1994-97.

#### SUMMARY OF CHANGES

This June 1996 version of the *Guide to Standards and Implementation* differs from the June 1995 version as follows:

Section A	No change
Section B	Updated Scope & Sequence
Section C	Minor edits to Planning for Instruction
Sections D, E, F	All conditions and criteria have been revised to include references to assessment tools and standards <i>with some modifications to specific learner expectations</i>
Section G	Assessment tools have been revised and expanded
Section H	Information on linkages and transitions have been updated and reorganized
Section I	Resource lists have been updated to include new resource approvals
Section J	Sample student learner guides have minor revisions, particularly to "HOW will your mark be determined?" and "WHICH resources may you use?"
Section K	Acknowledgments are not included in this version

In May 1997, the Guides to Standards and Implementation will be revised again in preparation for provincial implementation in September 1997.

Questions or comments about this Guide to Standards and Implementation are welcome and should be directed to:

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# CAREER AND TECHNOLOGY STUDIES

## PROGRAM PHILOSOPHY/RATIONALE

Through Career and Technology Studies (CTS), secondary education in Alberta is responding to the many challenges of modern society, helping young people develop daily living skills, and nurturing a flexible, well-qualified work force.

In Canada's information society, characterized by rapid change in the social and economic environment, students must be confident in their ability to respond to change and successfully meet the challenges they face in their own personal and work lives. In particular, they must make decisions about what they will do when they finish high school. Many students will enter the work force, others will continue their education. All students face the challenges of growing independence and responsibility, and of entering the highly competitive workplace and/or post-secondary programs.

Secondary schools also face challenges. They must deliver, on a consistent basis, high quality, cost-effective programs that students, parents and community find credible and relevant.

CTS helps schools and students meet these challenges. Schools can respond more efficiently and effectively to student and community needs and expectations by using the opportunities in the CTS curriculum to design courses and access school, community and distance learning resources. Students can develop the confidence they need as they move into adult roles by assuming increased

responsibility for their learning; cultivating their individual talents, interests and abilities; and defining and acting on their goals.

As an important component of basic education in Alberta secondary schools, CTS promotes students' achievement by setting clear expectations and recognizing students' success. Students in CTS develop competencies—that is, the knowledge, skills and attitudes students must demonstrate, or what they know and can do.

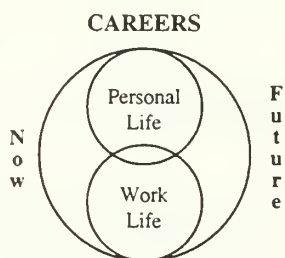
These competencies can be applied now and in the future as students make a smooth transition into adult roles in the family, community, workplace and/or further education. To help ensure this transition for students, clearly stated expectations and standards have been defined with the assistance of teachers, business and industry representatives and post-secondary educators.

CTS offers *all* students important learning opportunities. Regardless of the particular area of study chosen, students in CTS will:

- develop skills that they can apply in their daily lives now and in the future
- refine career-planning skills
- develop technology-related skills
- enhance employability skills
- apply and reinforce learnings developed in other subject areas.

In CTS, students build skills they can apply in their everyday lives. For example, in the CTS program, particularly at the introductory levels, students have the opportunity to improve their ability to make sound consumer decisions, and to appreciate environmental and safety precautions.

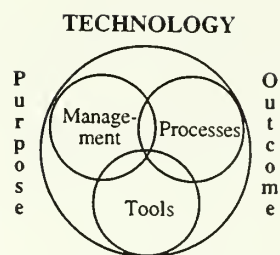
A career encompasses more than activities related to a person's job or occupation; it involves one's personal life in both local and global contexts; e.g., as a family member, a friend, a community volunteer, a citizen.



The integration of careers throughout the CTS program helps students make effective career decisions and target their efforts. Students in CTS will have the opportunity to expand their knowledge about careers, occupations and job opportunities and the education and/or training requirements involved. As well, they will recognize the need for lifelong learning.

Students in CTS will have the opportunity to use and apply technology and systems effectively and efficiently, which involves:

- a decision regarding which processes and procedures best suit the task at hand
- the appropriate selection and skilled use of the tools or resources that are available
- an assessment of and management of the impact the use of the technology may have on themselves, on others and on the environment.



Integrated throughout CTS are employability skills, those basic competencies that help students develop their personal management and social skills. Personal management skills are improved as students take increased responsibility for their learning, design innovative solutions to problems or challenges, and manage resources effectively and efficiently. Students' social skills improve through learning experiences that require them to work effectively with others, demonstrate teamwork and leadership, and maintain high standards in safety and accountability.

Further enhancing the employability skills, CTS reinforces and enhances learnings developed in core and other complementary courses. The curriculum emphasizes, as appropriate, the effective application of communication and numeracy skills.

Finally, in addition to the common outcomes described above, those students who focus on a particular area of study will develop career-specific competencies that support entry into the workplace and/or related post-secondary programs. Career-specific competencies can involve understanding and applying appropriate terminology, processes and technologies related to a specific career, occupation or job.



## GENERAL LEARNER EXPECTATIONS

General learner expectations describe the basic competencies that are integrated throughout the CTS program.

Within an applied context that is relevant to personal goals, aptitudes and abilities, the student in Career and Technology Studies will:

- demonstrate the basic knowledge, skills and attitudes necessary for achievement and fulfillment in personal life
- develop an action plan that relates personal interests, abilities and aptitudes to career opportunities and requirements
- use technology effectively, linking and applying available tools, management and processes to produce a desired outcome
- develop personal management skills by:
  - linking theory and practice, using resources, tools, technology and processes responsibly and efficiently (managing learning)
  - applying effective and innovative decision-making and problem-solving strategies in the design, production, marketing and consumption of goods and services (being innovative)
  - selecting relevant, goal-related activities, ranking them in order of importance, allocating necessary time, and preparing and following schedules (managing resources)
- improve social interaction skills by:
  - demonstrating flexibility and cooperative work and communication behaviors (working with others)
  - participating as a team member by working cooperatively with others and contributing to the group with ideas, suggestions and effort (teamwork and leadership)
  - demonstrating high standards of diligence, attendance and punctuality, following safe procedures consistently, and recognizing and eliminating potential hazards (demonstrating responsibility)
- demonstrate appropriate verbal, written, composition, summarization and presentation skills
- use basic computation and measurement principles accurately and efficiently.



## PROGRAM ORGANIZATION

### CURRICULUM STRUCTURE

Career and Technology Studies is organized into *strands* and *modules*.

**Strands** in CTS define competencies that help students:

- build daily living skills
- investigate career options
- use technology (managing, processes, tools) effectively and efficiently
- prepare for entry into the workplace and/or related post-secondary programs.

In general, strands relate to selected industry sectors that offer positive occupational opportunities for students. Some occupational opportunities require further education after high school, and some allow direct entry into the workplace. The industry sectors encompass both goods-producing industries, such as agriculture, manufacturing and construction, and service-producing industries, such as business services, health services, and finance and insurance services.

**Modules** are the building blocks for each strand. They define what a student is expected to know and be able to do (exit-level *competencies*). Modules also specify prerequisites and facility and instructional parameters, where necessary.

The competencies a student must demonstrate to achieve success in a module are defined through the *module learner expectations*. Senior high school students who can demonstrate the module learner expectations (i.e., have the designated competencies) will qualify for one credit towards their high school diploma.

Module learner expectations are a culmination of the *specific learner expectations*, which provide a more detailed framework for instruction. They define the scope and depth of knowledge, skills and attitudes the student should acquire.

The following chart shows the 22 strands that comprise the CTS program and the number of modules available in each strand.

Strand	No. of Modules
1. Agriculture	31
2. Career Transitions	23
3. Communication Technology	32
4. Community Health	31
5. Construction Technologies	46
6. Cosmetology	58
7. Design Studies	31
8. Electro-Technologies	37
9. Energy and Mines	27
10. Enterprise and Innovation	8
11. Fabrication Studies	41
12. Fashion Studies	29
13. Financial Management	15
14. Foods	37
15. Forestry	21
16. Information Processing	43
17. Legal Studies	13
18. Logistics	12
19. Management and Marketing	21
20. Mechanics	53
21. Tourism Studies	24
22. Wildlife	17

**Note:** As of September 1996, all 22 strands are available for optional implementation in Alberta junior and high schools. Provincial implementation of all strands is scheduled for September 1997.

## LEVELS OF ACHIEVEMENT

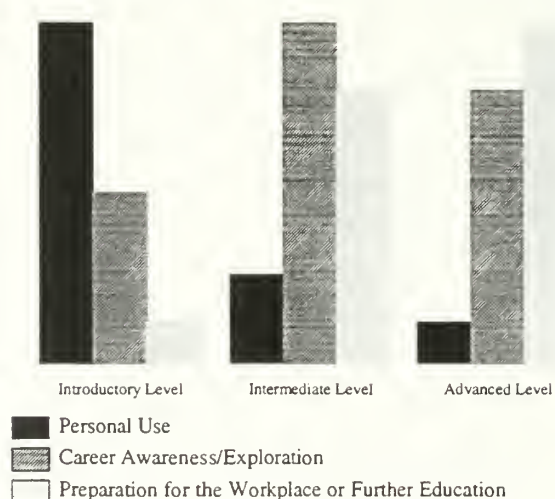
Modules are organized into three levels of achievement: introductory, intermediate and advanced. As students progress through the levels, they will be expected to meet higher standards and demonstrate increased degree of competence, both in the general learner expectations and the module learner expectations.

**Introductory level modules** help students build daily living skills and form the basis for further learning. Introductory modules are developed for students who have no previous experience in the strand.

**Intermediate level modules** build on the competencies developed at the introductory level. They provide a broader perspective, helping students recognize the wide range of related career opportunities available within the strand.

**Advanced level modules** demand a higher level of expertise and help prepare students for entry into the workplace or a related post-secondary program.

The following illustrates the relative emphasis on the aspects of career planning at each of the levels.

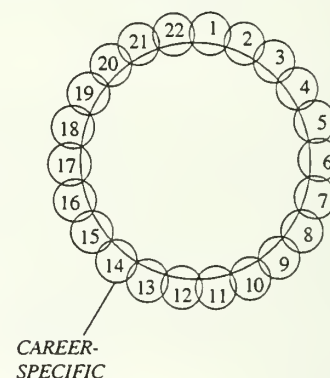


## TYPES OF COMPETENCE

Two types of competence are defined within the CTS program: basic and career-specific.

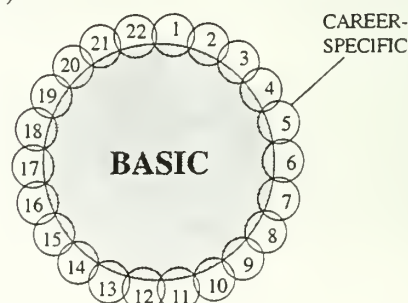
**Basic Competencies** are generic to any career area and are developed within each module. Basic competencies include:

- personal management; e.g., managing learning, being innovative, ethics, managing resources
- social; e.g., communication, teamwork, leadership and service, and demonstrating responsibility (safety and accountability).



**Career-specific Competencies** relate to a particular strand. These competencies build daily living skills at the introductory levels and support the smooth transition to the workplace and/or post-secondary programs at the intermediate and advanced levels.

The following model shows the relationship of these two types of competencies within the 22 strands of CTS (numbers refer to the chart on page A.5):





# **CURRICULUM AND ASSESSMENT STANDARDS**

## **CURRICULUM STANDARDS**

Curriculum standards in CTS define what students must know and be able to do. Curriculum standards are expressed through general learner expectations for CTS, and through module and specific learner expectations for each strand.

## **ASSESSMENT STANDARDS**

Assessment standards define how the student's performance will be judged. In CTS, each assessment standard defines the conditions and criteria to be used for assessing the competencies defined in each module learner expectation. Students must fully meet each assessment standard, including all of the criteria and conditions defined for the module. Assessment standards are in draft form, as are tools and weightings, and will be validated 1994–97.

Teachers throughout the province will be able to ensure students receive a fair and reliable assessment. Students will use the assessment standards to guide their efforts, ensuring they participate more effectively and successfully in the learning and assessment process. Standards at advanced levels are as much as possible linked to workplace and post-secondary entry-level requirements.

The following pages describe the Information Processing strand in the Career and Technology Studies program.



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# INFORMATION PROCESSING

## STRAND RATIONALE

Information Processing represents the study of electronic technologies as they apply to personal use and the business environment.

As we move more rapidly into the information age, it is crucial that students are able to use electronic technologies to access and manipulate information in an efficient manner. Accurate, timely information is the basis for sound decision making and effective communication.

As students build confidence in their understanding of the various information processing tools and processes, they will be able to transfer their knowledge and skill to a wide range of contexts, and will be better able to adapt to the continual changes caused by the evolving technologies.

To understand the shift from the *industrial society* towards the *information age*, it is important that a student understands the significance of the current technological development and how technology affects an individual's daily life as well as the impact it has on the world of work. Within this perspective Information Processing provides for the development of:

- a meaningful study of technological trends
- an understanding of the stems that relate in whole or in part to the management of information

- an understanding of the ethical and societal issues concerning technological development and its impact on society
- technological skills and knowledge designed for personal use
- technological skills and knowledge that transfer to other curriculum areas
- technological skills and knowledge required for the world of work.

Students will learn to input, process and output information in the following areas:

- systems operations
- text/data input
- productivity software
- applied processing
- dynamic environment
- programming (procedure-oriented and object-oriented).





## STRAND ORGANIZATION

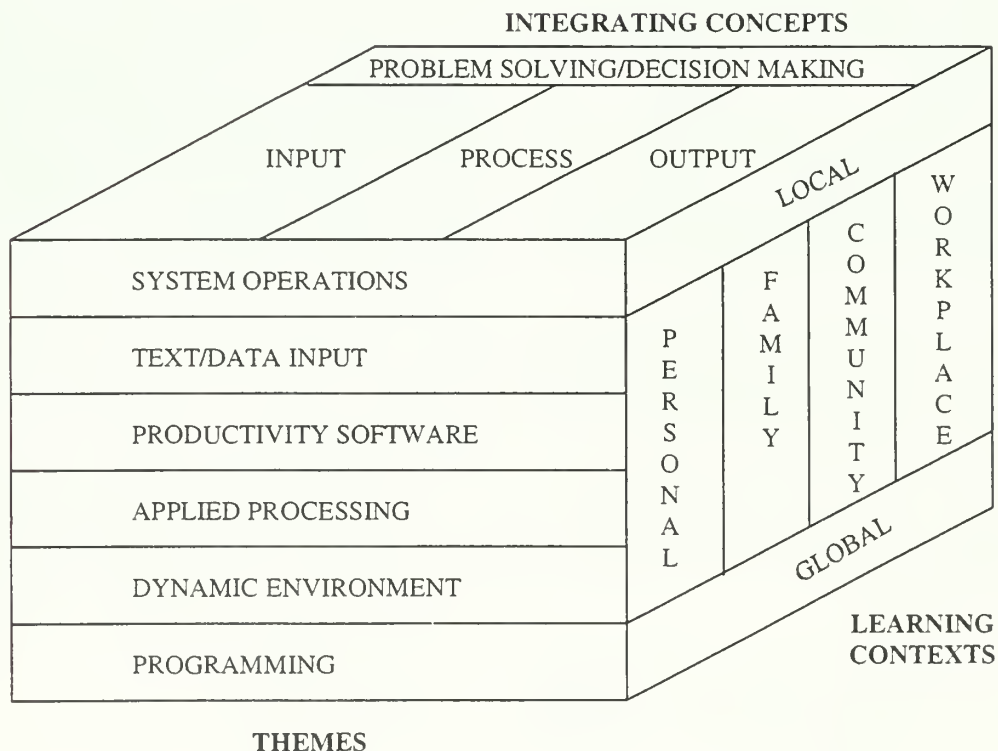
The developmental model indicates the relationship of what the students learn (as described in the themes), how these learnings are emphasized within the modules (as described in the integrating concepts) and how students will apply these learnings (as described in the learning contexts).

### LEVELS

Students working on modules at the introductory level develop basic techniques and skills which, while primarily for personal use, also form the foundation for the development of more professional applications.

In the intermediate level modules, students are expected to work more independently and expand and refine basic skills in a wide range of applications.

At the advanced level, students use initiative to efficiently integrate applications and processes to produce high quality work to workplace standards.



## THEMES

The themes provide learning experiences that link knowledge, skills and attitudes with real-life situations. Modules are organized into six themes:

- system operations
- text/data input
- productivity software
- applied processing
- dynamic environments
- programming.

The modules in the System Operations theme help students efficiently use and assess computer hardware and related software and peripherals, and understand and apply various communication protocols.

In the Text/Data Input themes students develop efficient keyboarding competencies for both personal use and professional skill levels.

In Productivity Software modules students learn the commands and processes of the key productivity software packages used in personal and professional applications, including word processing, spreadsheet, database, graphics and electronic/desktop publishing. Students expand their ability use these software applications in other CTS strands such as Communication Technology, or in other courses such as English, mathematics, etc.

The Applied Processing theme is designed to increase students' level of productivity as they produce a variety of documents that integrate text, data and graphics applications.

In the Dynamic Environments theme students work with software that links various media and processes in new and unique ways to manage and communicate information.

The Programming theme provides an opportunity for students to develop high-level, structured programming skills, using either procedure-oriented or object-oriented processes.

## INTEGRATING CONCEPTS

Integrated within each of the Information Processing modules is the expectation that students will identify and resolve problems efficiently by using effective decision making skills. Students apply these problem-solving/decision-making skills as they determine the most effective and efficient processes to use to input, process and output information.

## LEARNING CONTEXTS

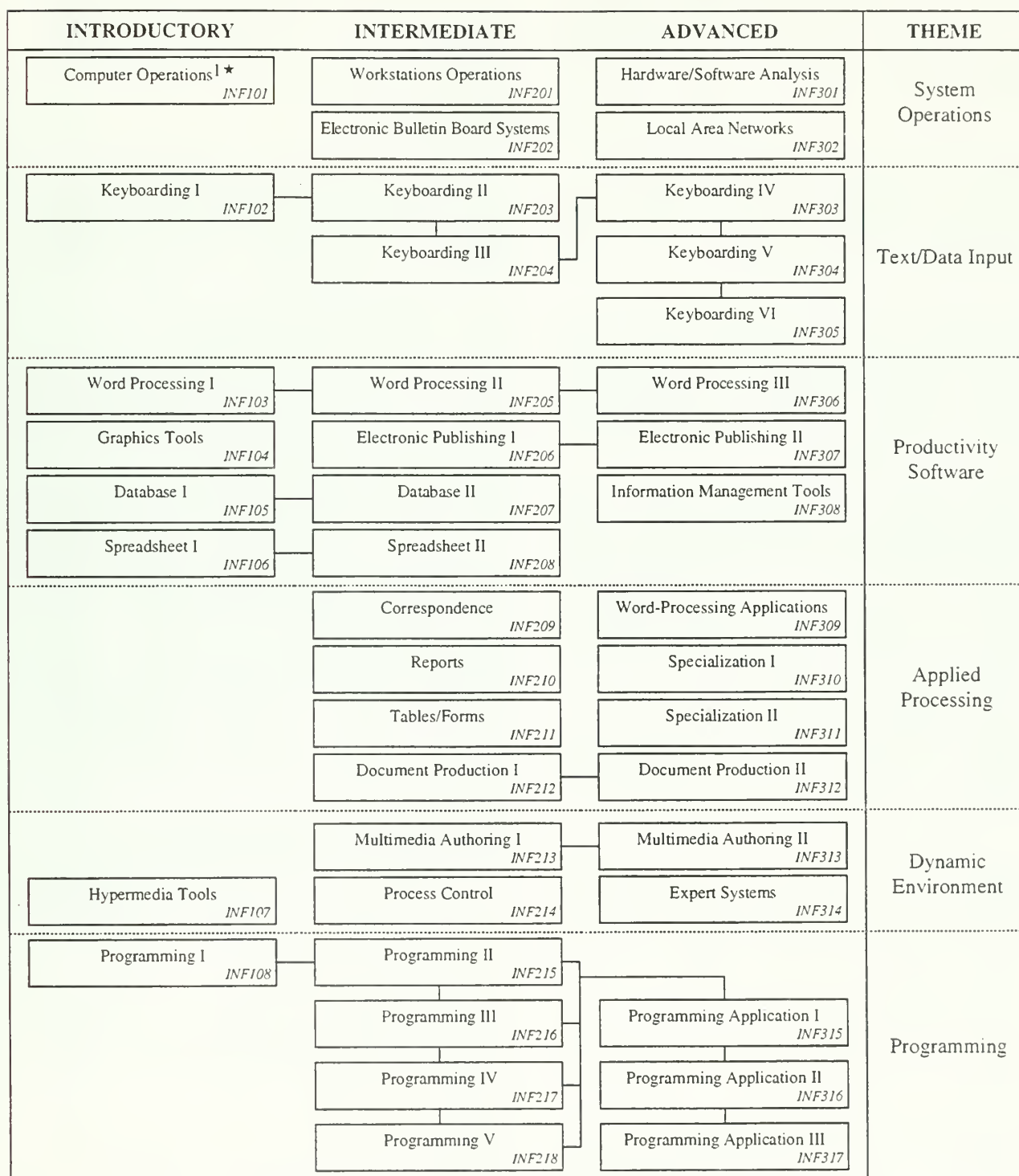
Learning Contexts help students relate their learning to real life experiences and challenges. In modules at the introductory level, these challenges are most frequently in a context typical in daily living—within the home, school or community. As the student progresses through the intermediate and advanced levels, the challenges and related expectations for performance involve contexts that relate to the workplace.

With the ever-increasing power of information technologies, all of these applications can be applied both at the local and global level. The competencies students develop in Information Processing will also support students as they continue their education in post-secondary or other further education opportunities.

(Interim Status, 1994)

## SCOPE AND SEQUENCE

## INFORMATION PROCESSING



— Prerequisite      ..... Recommended sequence

I. Prerequisite to all modules in this strand.

★ This module provides a strong foundation for further learning in this strand

## MODULE DESCRIPTIONS

### **Module INF101: Computer Operations**

Computer Operations is pre/corequisite to all modules in the Information Processing strand and develops personal use skill in the following applications: file management, basic hardware and software operations, text entry and workstation routines.

### **Module INF102: Keyboarding I**

This module provides an opportunity for students to develop accurate touch-keystroking of text and data appropriate for personal use and the application of efficient workstation procedures.

### **Module INF103: Word Processing I**

This module provides an opportunity for students to develop skill in using basic commands and functions in word-processing software, including document editing, formatting and printing of reports, correspondence, and tables suitable for personal use applications.

### **Module INF104: Graphics Tools**

Students learn the basic commands and functions of computer graphing software, including bitmapped graphics (paint program) and vector graphics (draw program). Students develop basic skills in manipulating pre-made graphics as well as producing their own graphics.

### **Module INF105 : Database I**

Students are introduced to the basic commands and functions of software and demonstrate how database software can be used as a personal tool in data and information management.

### **Module INF106 : Spreadsheet I**

Students have an opportunity to use basic functions and commands in spreadsheet software for general data manipulation and personal record keeping

### **Module INF107 : Hypermedia Tools**

Students develop basic skills with tools used for computerized presentations involving text, data, graphics, sounds and animation.

### **Module INF108 : Programming I**

Students are introduced to computer programming languages and a structured programming environment and will construct algorithms and code instructions to solve identified problems.

### **Module INF201: Workstation Operations**

Students learn computer workstation operations including computer architecture, peripherals, configurations, operating system environments and platforms, utility software, diagnostic and protection software, hard drive file updating and maintenance, support resource application, and trouble shooting activities.

### **Module INF202: Electronic Bulletin Board Systems**

This module provides an opportunity for students to learn to operate and maintain an EBB system(s), including proper use of hardware, software, peripherals, interface protocols, telecommunication equipment, data transmission characteristics and messaging parameters.

### **Module INF203: Keyboarding II**

This module enhances the students' personal use keyboarding competencies by increasing the rate of accurate touch-keystroking of the alphabet and numbers and selected punctuation keys.

### **Module INF204: Keyboarding III**

This module enhances the students' keyboarding competencies by increasing the rate of accurate touch-keystroking of alphabetic, numeric and all punctuation keys to support personal use and limited entry-level workplace opportunities.

### **Module INF205: Word Processing II**

Students expand their skills in using word-processing software commands and functions to produce mailable reports, correspondence (including letters and memos) and tables from rough draft copy.

### **Module INF206: Electronic Publishing I**

This module provides an opportunity for students to develop skill using electronic/desktop publishing software to create a variety of camera-ready documents.

### **Module INF207: Database II**

Students use all the commands and functions of electronic database software that support effective and efficient database applications.

### **Module INF208: Spreadsheet II**

Students demonstrate advanced level spreadsheet commands and functions to calculate and manipulate data and prepare appropriate printouts and reports in text and graphic format.



**Module INF209: Correspondence**

Students expand their rate of document production as they prepare various forms of correspondence in mailable form, using word-processing software.

**Module INF210: Reports**

Students expand their rate of production as they prepare various reports and manuscripts in mailable form.

**Module INF211: Tables/Forms**

Students expand their rate of document production as they prepare various tables/forms in mailable form.

**Module INF212: Document Production I**

This module provides an opportunity for students to develop document production skills requiring the integration of data, text and graphics.

**Module INF213: Multimedia Authoring I**

This module introduces multimedia software and an opportunity to develop basic authoring competence by accessing and integrating software resident text, video, audio clips.

**Module INF214: Process Control**

Students develop skills in robotics/simulation software control by creating/modifying/using programs that incorporate computer-controlled movements/events in robotics/simulation activities/applications.

**Module INF215: Programming II**

Students have an opportunity to increase programming skills by designing and generating programming code to handle decision-making and repetitive processes.

**Module INF216: Programming III**

Students have an opportunity to increase programming skills by using sub-program structures.

**Module INF217: Programming IV**

Students have an opportunity to increase programming skills by developing and using derived data types.

**Module INF218: Programming V**

Students have an opportunity to increase programming skills by developing and using recursive, sorting and merging algorithms.

**Module INF301: Hardware/Software Analysis**

This module provides an opportunity for students to analyze, compare and evaluate hardware/software on the basis of user requirements.

**Module INF302: Local Area Networks**

Students learn about local area network (LAN) computer systems, including hardware and peripheral configurations, interface protocols and data transmission characteristics.

**Module INF303: Keyboarding IV**

This module develops the students' keyboarding skill of text and data to entry-level occupational expectations.

**Module INF304: Keyboarding V**

This module increases occupational-level keyboarding competence involving text, data and function/service keys from straight copy and edited material.

**Module INF305: Keyboarding VI**

This module enhances occupational-level keyboarding competence involving all keystroke functions from unedited, edited and straight copy material.

**Module INF306: Wordprocessing III**

This module provides an opportunity for students to develop occupational-level competence in the use of word-processing software commands and functions to produce mailable reports, correspondence, and tables including the importing and merging of text, data and graphics.

**Module INF307: Electronic Publishing II**

Students use the functions and commands of electronic/desktop publishing software as they integrate text composing, editing, typesetting, graphic generation and page layout functions to create customized, professional-quality documents.

**Module INF308: Information Management Tools**

This module is designed to develop students' competence in creating an information management system through the use of relational databases and spreadsheet software. Students will plan, design, test, implement and present an information management system related to a particular area of interest or scenario.

**Module INF309: Word-Processing Applications**

This module develops high rates of production as students produce documents using numerous functions/commands to create, revise, format and print a wide range of documents in mailable form.

**Module INF310: Specialization I**

This module provides an opportunity to specialize in document preparation, terminology application, and associated office routine expectations in a specific focus area such as a medical, legal, petroleum, real estate, insurance, travel/tourism, forestry or agricultural environment.

**Module INF311: Specialization II**

This module provides an opportunity to develop workplace competence in a specific focus area such as medical, legal, petroleum, real estate, insurance, travel/tourism, forestry, or agricultural environment by creating/completing appropriate documents, employing specialized communication skills and conforming to identified workplace expectations under identified time constraints.

**Module INF312: Document Production II**

This module provides an opportunity for students to expand their document production skills to workplace standards. Documents could require the importing and integration of word-processing, spreadsheet, graphics and database files.

**Module INF313: Multimedia Authoring II**

This module provides an opportunity to learn to use a multimedia file/media authoring software based on digitized input of text, video and audio clips.

**Module INF314: Expert Systems**

Students develop an introductory knowledge of expert systems such as artificial intelligence and virtual reality. They will gain competence by developing/modifying programs that incorporate computer-controlled environments and multimedia interactive activities and applications.

**Module INF315: Programming Application I**

Students create programs that use external files.

**Module INF316: Programming Application II**

Students create a program using a second programming language.

**Module INF317: Programming Application III**

Students enhance a program using a second programming language.

## SECTION C: PLANNING FOR INSTRUCTION

CTS provides increased opportunity for junior and senior high schools to design courses based on the needs and interests of their students and the circumstances within the school and community. Some strands may be appropriately introduced at the junior high school level. Other strands are more appropriately introduced at the senior high school level or to Grade 9 students. Refer to this section for recommendations regarding the Information Processing strand, or the *CTS Manual for Administrators, Counsellors and Teachers* for a summary of the recommended grade levels for each strand.

### PLANNING FOR CTS

#### Defining Courses

Schools determine which strands and modules will be offered in a particular school, and will combine modules into courses.

Each module was designed for approximately 25 hours of instruction. However, this time frame is only a guideline to facilitate planning. The CTS curricula are competency based, and the student may take more or less time to gain the designated competencies within each module.

A course will usually consist of modules primarily from the same strand but, where appropriate, may include modules from two or more strands. Refer to the *CTS Manual for Administrators, Counsellors and Teachers* for more information on course names and course codes.

Module selection and sequencing must consider the module parameters, which define:

- prerequisite and corequisites (entry-level competencies)
- instructional qualifications, if specialized
- equipment and facility requirements, if specialized.

The module parameters are defined for each module in Sections D, E and F of this Guide.

#### Degree of Flexibility

The CTS program, while designed using the modular structure to facilitate flexible time-tabling and instructional delivery, does not mandate the degree of flexibility a school or teacher will offer. The teacher and school will determine the degree of flexibility available to the student. Within the instructional plan established by the school, the student may:

- be given the opportunity to progress at a rate that is personally challenging
- have increased opportunity to select modules that develop competencies he or she finds most relevant.

#### Integrating Basic Competencies

Basic competencies are also developed throughout the CTS program and within each module. Selected basic competencies will be emphasized within a module, depending on the nature of the career-specific competencies defined for the module.

Refer to Section G (Assessment Tools) of this Guide for the description of student behaviours expected at each of the four developmental stages defined for the basic competencies.

Assessment of basic competencies could include input and reflection involving the student, teacher(s), peers and others. Description of the observed behaviour could be provided through a competency profile for the module. Positive, ongoing interaction between the student and teacher will support motivation for student growth and improvement.

The basic competencies related to working with others should be emphasized in Information Processing modules at all levels where group activities and projects would be appropriate.



Assessment of student achievement on the basic competencies is integrated throughout the other module learner expectations.

### **Assessing Student Achievement**

Assessing the student's competency is a process of gathering information by way of observations of process, product and student interaction.

Where appropriate, assessment tools have been defined to assist the teacher and student in the assessment. Refer to Section G (Assessment Tools) of this Guide to Standards and Implementation for copies of the various tools (worksheets, checklists, sample questions, etc.).

A suggested emphasis for each module learner expectation has also been established. The suggested emphasis provides a guideline to help teachers determine time allocation and/or a percentage grade for students.

### **Recognizing Student Achievement**

At the high school level, successful demonstration of the exit-level competencies in a module qualifies the student for one credit. Refer to Section A of this Guide for more detailed information about how curriculum and assessment standards are defined in CTS. Refer to the *CTS Manual for Administrators, Counsellors and Teachers* for more information on how student achievement can be recognized and reported at the school and provincial levels.

### **Resources**

A comprehensive resource base, including print, software and audio-visual, has been identified to support the Information Processing strand. It is intended that these resources will form the basis of a resource centre, encouraging teachers and students to access a wide selection of resources and other information sources throughout the learning process. Unless otherwise noted, these resources are considered to be suitable for both junior and senior high school students.

Authorized resources may be obtained from the Learning Resources Distributing Centre or directly from the publisher or distributor. Refer to Section I (Learning Resource Guide) for the complete resource list including curriculum correlations and resource annotations. Additional sources refer to non-commercial or government agencies that offer resources that may be of assistance in this strand.

In addition to the resources, sample Student Learning Guides will be available. These samples, designed for individual student or small group use, provide an instructional plan for selected modules and include the following components:

- Why take this module?
- What are the entry-level competencies?
- What are the exit-level competencies?
- What resources may be accessed?
- What assignments/activities must be completed?
- What are the time lines?
- How will the final mark be calculated?

Refer to Section J of this guide for copies of these sample learning guides. They are also available, by request, from the CTS Unit in print and/or disk format (Microsoft Word).

## **PLANNING FOR INFORMATION PROCESSING**

The following suggestions are provided to assist teachers, schools and school system administrators as they plan to deliver modules from the Information Processing strand.

### **Selecting Modules**

The scope and sequence chart in Section B provides an overview of the Information Processing modules, indicating prerequisites and theme areas. Brief descriptions of the modules follow the scope and sequence chart in Section B.

### ***Information Processing in Junior High***

The introductory level modules may be offered at junior high. Because many students entering junior high school may be familiar with computers, it is important to determine the level of competence students have in relation to the competencies defined for the modules.

The number of modules will vary according to the time available throughout Grades 7, 8, and 9:

Time Available	Modules
25 hours	Computer Operations
50 hours	Computer Operations Word Processing I
75–100 hours	add one of the following: Graphics Tools Database I Spreadsheet I Hypermedia Tools Programming I

Where appropriate, junior high school students may also take intermediate level modules, particularly in the Text/Data Input and Productivity Software themes.

Modules may be combined into courses and offered within a school year or over a span of a few years.

### ***Information Processing in Senior High***

Following are a few examples of module groupings into sample courses:

5 credits (no previous experience)	Computer Operations Keyboarding I Word Processing I Database I Spreadsheet I
3 credits (strong background from junior high school or through personal experience)	Keyboarding I Database I Spreadsheet I
5–15 credits (foundation for entry into workplace as computer technician)	Computer Operations Keyboarding I Word Processing I Database I Spreadsheet I and modules selected from System Operations theme and Programming theme
5–15 credits (foundation for entry into workplace into administrative support positions)	Keyboarding II Word Processing II Database II Spreadsheet II Electronic Publishing I and modules selected from the Applied Processing theme and Management and Marketing Information Management theme

Modules could also be grouped into comprehensive courses that emphasize a particular theme.

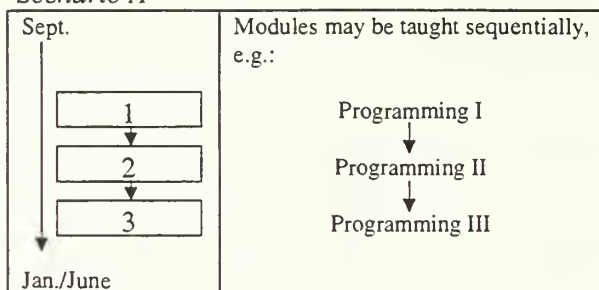
### **Organizing for Learning**

Before selecting modules, teachers should check the module parameters outlined in each module (see Sections D, E and F of this Guide). These module parameters describe:

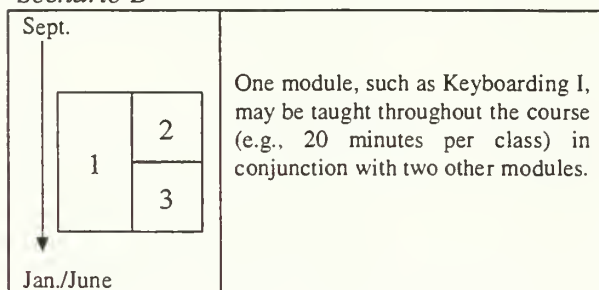
- prerequisite or corequisite modules
- facility and equipment requirements, if required, and
- instructional qualifications, if required.

Modules can be delivered sequentially, concurrently or combined. For example, although the modules from the Text/Data Input theme and the Programming theme are sequential, they can be combined with modules from the System Operations theme, the Productivity Software theme, or the Applied Processing theme; e.g.:

#### Scenario A

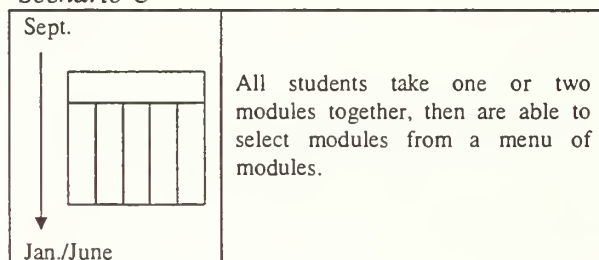


#### Scenario B

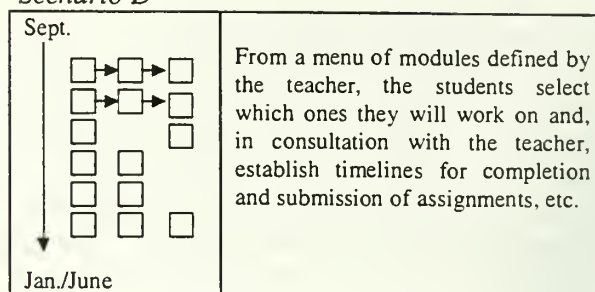


Teachers can also allow students to progress at a rate that is personally challenging; e.g.:

#### Scenario C



#### Scenario D



#### Recurring Concept—Workstation Management

Each module in Information Processing requires students to consistently apply appropriate workstation routines. This requires students to demonstrate responsibility and professionalism throughout the instruction period as they:

- manage and use the workstation and related resources
- make efficient and effective use of their own and others' time
- learn in as independent a manner as possible
- use related terminology appropriately, both verbally and in print.

An emphasis of 10 per cent has been allocated in each module for workstation management.

#### Identifying Linkages

Section H of this Guide describes some of the linkages that are possible between the Information Processing strand and:

- other CTS strands
- junior and senior high school Math and Science programs.

Additional linkages with language arts and social studies and complementary programs are being defined.

#### Improving Smooth Transition to the Workplace and/or Related Post-secondary Programs

Refer to Section H of this Guide for potential transitions students may make:

- into the workplace
- into related post-secondary programs or other avenues for further learning.



# MODULE CURRICULUM AND ASSESSMENT STANDARDS:

## INTRODUCTORY LEVEL

The following pages define the curriculum and assessment standards for the introductory level of Information Processing.

Introductory level modules help students build daily living skills and form the basis for further learning. Introductory modules are developed for students who have no previous experience in the strand.

Module learner expectations define the competencies a student must demonstrate to achieve success in a module. Assessment standards define the conditions and criteria to be used for assessing the competencies defined in the module learner expectations. These assessment standards and the accompanying assessment tools are in draft form and will be validated from 1994 to 1996.

Specific learner expectations provide a detailed framework for instruction to help students build the competencies defined in the module learner expectations. Additional information and suggestions for instruction are provided in the Notes column; teachers may wish to use this space to record their ideas for instruction or student projects.

Module INF101:	Computer Operations.....	D.3
Module INF102:	Keyboarding I .....	D.7
Module INF103:	Word Processing I.....	D.11
Module INF104:	Graphics Tools.....	D.15
Module INF105:	Database I.....	D.19
Module INF106:	Spreadsheet I.....	D.25
Module INF107:	Hypermedia Tools.....	D.31
Module INF108:	Programming I .....	D.35



## MODULE INF101: COMPUTER OPERATIONS

**Level:** Introductory

**Theme:** Systems Operations

**Prerequisite:** None

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

Computer Operations is pre/corequisite to all modules in the Information Processing strand and develops personal use skill in the following applications: file management, basic hardware and software operations, text entry and workstation routines.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>demonstrate basic file management skills</li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>demonstrating effective and efficient file management techniques. <i>Assessment Tool</i> <i>Assessment Checklist A: File Management Procedures (INF101-1)</i> <i>Standard</i> <u>All</u> procedures must be demonstrated</li></ul>	10
<ul style="list-style-type: none"><li>enter text and data using proper touch keyboarding technique</li></ul>	<ul style="list-style-type: none"><li>demonstrating touch keyboarding technique. <i>Assessment Tool</i> <i>Assessment Checklist B: Text-Data Entry (INF101-1)</i> <i>Standard</i> <u>All</u> procedures must be demonstrated</li></ul>	50
<ul style="list-style-type: none"><li>identify components of a computer workstation and basic functions of a computer</li></ul>	<ul style="list-style-type: none"><li>identifying and explaining use of computer workstation components. <i>Assessment Tool</i> <i>Assessment Checklist C: Computer Workstation Components (INF101-1)</i> <i>Standard</i> <u>All</u> procedures must be demonstrated</li></ul>	10

# MODULE INF101: COMPUTER OPERATIONS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>describe one or more recent initiatives or issues in technological development</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>preparing a report (oral, print, or multi-media). The report will provide a clear and concise description of: <ul style="list-style-type: none"> <li>current or emerging technological initiative or issue</li> <li>actual or potential impact on individual and society</li> <li>list of sources of information.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Guide: Presentations and Reports (INF101-2)</i></p> <p><i>Standard</i>  <i>Rating of 1 on each component</i></p>	20
<ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  1 – Workstation Use  1 – Time Management/Organization  2 – Professionalism</p>	10
<ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

## MODULE INF101: COMPUTER OPERATIONS (continued)

Concept	Specific Learner Expectations	Notes
File Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• use appropriate commands to boot/access computer system(s) <ul style="list-style-type: none"> <li>– standalone</li> <li>– network</li> </ul> </li> <li>• demonstrate ability to: <ul style="list-style-type: none"> <li>– create, name, save and close files</li> <li>– retrieve and open files</li> <li>– print files.</li> </ul> </li> </ul>	
Text/Data Entry	<ul style="list-style-type: none"> <li>• develop “touch keyboarding” skills with alphabetic and basic punctuation keys using proper techniques characterized by: <ul style="list-style-type: none"> <li>– correct fingering</li> <li>– appropriate body position</li> <li>– acceptable eye focus</li> </ul> </li> <li>• proofread and edit text or data as appropriate to ensure error-free documents, including: <ul style="list-style-type: none"> <li>– manually proofread copy and compare copy with original text on: <ul style="list-style-type: none"> <li>• screen</li> <li>• hard copy</li> </ul> </li> <li>– use software editing functions (spell check, grammar checks).</li> </ul> </li> </ul>	The emphasis is on developing touch stroking, using correct fingering. Keyboarding speed is developed in the Keyboarding modules.
Workstation Components and Computer Functions	<ul style="list-style-type: none"> <li>• identify and describe basic computer functions, related to the workstation hardware and software that is in use, including: <ul style="list-style-type: none"> <li>– hardware architecture, configurations and peripherals: <ul style="list-style-type: none"> <li>• input (keyboard, scanners, voice etc.)</li> <li>• processing</li> <li>• storage</li> <li>• output (screen, printer)</li> <li>• telecommunications</li> </ul> </li> <li>– types of software: <ul style="list-style-type: none"> <li>• system</li> <li>• application</li> <li>• utility</li> </ul> </li> <li>– key procedures: <ul style="list-style-type: none"> <li>• operating</li> <li>• backup</li> <li>• preventive/emergency</li> </ul> </li> </ul> </li> <li>• use related terminology appropriately.</li> </ul>	

## MODULE INF101: COMPUTER OPERATIONS (continued)

Concept	Specific Learner Expectations	Notes
Initiatives and Issues in Technology	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• research one or more recent initiatives or issues that relate to computer technology</li> <li>• prepare a report (verbal, print or multi-media) that: <ul style="list-style-type: none"> <li>– provides a clear and concise description of the initiative or issue</li> <li>– describes actual or potential impact on the individual and/or society in</li> <li>– lists sources of information.</li> </ul> </li> </ul>	<p>Topics could relate to initiatives or issues in:</p> <ul style="list-style-type: none"> <li>– personal life</li> <li>– professional life</li> <li>– privacy</li> <li>– security</li> <li>– ethical</li> <li>– computer infections (viruses, worms)</li> <li>– future trends.</li> </ul>
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



## MODULE INF102: KEYBOARDING I

**Level:** Introductory

Theme: Text/Data Input

**Prerequisite:** Computer Operations

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module provides an opportunity for students to develop accurate touch-keystroking of text and data appropriate for personal use and the application of efficient workstation procedures.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate keyboarding competence               <ul style="list-style-type: none"> <li>text entry (20 wpm)</li> <li>numeric entry (80 kpm)</li> <li>technique</li> </ul> </li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>3 timed-writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding :               <ul style="list-style-type: none"> <li>on alphabetic keys                   <ul style="list-style-type: none"> <li>one minute duration</li> <li>maximum 1 uncorrected error</li> <li><math>SI \leq 1.2</math></li> <li>minimum keystroke rate: 20 words per minute</li> </ul> </li> <li>on numeric keypad:                   <ul style="list-style-type: none"> <li>one minute duration</li> <li>maximum 1 uncorrected error</li> <li>minimum keystroke rate 80 numeric keystrokes per minute on 1 to 3 digit numbers</li> </ul> </li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Reference Chart: Keyboarding and Numberpad Rates (INFKEYNB)</i></p> <ul style="list-style-type: none"> <li>observations over the last quarter of the learning period, during timing and drill work.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Text–Data Entry (INFIDENT)</i></p> <p><i>Standard</i>  <i>Rating of:</i>            3 – Eye Focus            2 – Keystroking            1 – Service Keys            2 – Body Position</p>	<p>30</p> <p>10</p> <p>40</p>

## MODULE INF102: KEYBOARDING I (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  <i>1 – Workstation Use</i>  <i>2 – File Management</i>  <i>1 – Time Management/Organization</i>  <i>2 – Professionalism</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>20</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Text Entry	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate increasingly rapid, accurate touch keystroking on straight copy of: <ul style="list-style-type: none"> <li>alphabetic keys</li> <li>punctuation keys (.,:;?)</li> <li>service keys (enter, shift, delete, backspace, tab)</li> </ul> </li> <li>use function and cursor movement keys efficiently</li> <li>demonstrate correct keystroking technique <ul style="list-style-type: none"> <li>enter text using designated fingers</li> <li>maintain home-row position</li> <li>demonstrate correct posture (hand, arm, body)</li> </ul> </li> <li>demonstrate touch entry of numbers on number pad using correct fingering</li> </ul>	<p>Technique is the major focus emphasizing touch development on easy material.</p> <p>Develop speed and accuracy at the word and phrase level using short, repetitive timings (12 seconds to 1 minute) with straight copy text of varying SI. (1.0–1.3).</p> <p>Introduce only the word-processing and computer commands that are required as an instructional tool for developing keyboarding skill.</p>

MODULE INF102: KEYBOARDING I (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• proofread and edit text while on screen to ensure text is without error</li> <li>• analyze errors in keystroking and initiate remediation as appropriate for: <ul style="list-style-type: none"> <li>– spelling, shifting, punctuation and spacing errors</li> <li>– transposed, repeated, omitted letters.</li> </ul> </li> </ul>	It is recommended that timings be given from previously unseen material that students have not been allowed to practice on.
Data Entry	<ul style="list-style-type: none"> <li>• demonstrate rapid, accurate data entry on keyboard number pad: <ul style="list-style-type: none"> <li>– using designated fingers</li> <li>– maintaining anchor position.</li> </ul> </li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



**MODULE INF103: WORD PROCESSING I**

Level: Introductory

**Theme:** Productivity Software

**Prerequisite:** Computer Operations

**Corequisite:**            **Keyboarding I (recommended)**

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module provides an opportunity for students to develop skill in using basic commands and functions in word-processing software, including document editing, formatting and printing of reports, correspondence, and tables suitable for personal use applications.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate correct use of software functions by producing mailable, properly formatted               <ul style="list-style-type: none"> <li>– reports paginated with headings, references</li> <li>– letters with basic components</li> <li>– two-column tables with main and subheads</li> </ul> </li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• producing mailable documents, based on formatted and unformatted sources, focusing on the use of basic software functions for personal use applications including a collection of               <ul style="list-style-type: none"> <li>– reports, including applications such as essays, poems, research reports, journal responses, recipes, notices and posters</li> <li>– one-page letters, including applications such as personal and personal business letters</li> <li>– tables, including applications such as calendars, lists, daybooks, agendas, and display documents.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Word Processing (INFWP)</i></p> <p><i>Standard</i>  <i>Rating of 1 in the production of mailable documents (no errors in text and well-formatted)</i></p>	<p>30</p> <p>30</p> <p>30</p>



## MODULE INF103: WORD PROCESSING I (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  <i>1 – Workstation Use</i>  <i>2 – File Management</i>  <i>1 – Time Management/Organization</i>  <i>2 – Professionalism</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Software Functions and Applications	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>review key features of the word-processing software package <ul style="list-style-type: none"> <li>capabilities</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>use help functions and references as appropriate.</li> <li>demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>open/create/update files</li> <li>name files</li> <li>close files</li> </ul> </li> </ul>	<p>Integrate the learning of software functions and the production of documents with other subject areas such as Language Arts /English, Social Studies, Science</p>

## MODULE INF103: WORD PROCESSING I (continued)

Concept	Specific Learner Expectations	Notes
Software Functions and Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate key commands to               <ul style="list-style-type: none"> <li>format text                   <ul style="list-style-type: none"> <li>rulers/margins</li> <li>line spacing</li> <li>text alignment (left, right, centre, full justified)</li> <li>tabs/indents</li> <li>tables</li> <li>borders/shading</li> <li>text styles</li> <li>bulleted and numbered lists</li> <li>font types/sizes</li> <li>footers/headers</li> <li>page numbering</li> <li>page breaks (hard, widow/orphan)</li> <li>graphics</li> <li>print/preview in alternate formats)</li> </ul> </li> <li>file, edit, proofread text                   <ul style="list-style-type: none"> <li>move (cut, copy and paste)</li> <li>spell and/or grammar check</li> <li>thesaurus</li> <li>search and replace</li> <li>insert/delete text</li> </ul> </li> </ul> </li> <li>move through document(s) efficiently by using appropriate cursor movement tools/commands</li> </ul>	<p>Arrows, select, undo, go to.</p>
Document Production	<ul style="list-style-type: none"> <li>demonstrate appropriate key commands to produce the following documents in mailable form:               <ul style="list-style-type: none"> <li>reports such as research papers, essays, position papers, response journals, poems, recipes, etc.                   <ul style="list-style-type: none"> <li>headings/subheading</li> <li>references (footnotes, end notes, bibliography)</li> <li>headers/footers</li> <li>title page</li> </ul> </li> <li>personal and business correspondence such as letters to family and friends, customer complaint letter, letters of applications, letter to teacher etc.</li> </ul> </li> </ul>	<p>Mailable form: error-free text and well-formatted.</p> <p>APA and MLA are the two most common report styles, articulate with English/LA teachers and use the same style.</p> <p>full block style is the easiest style to present at this level</p>

## MODULE INF103: WORD PROCESSING I (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• letter parts (date, inside address, salutations, complimentary closing, name/title, references)</li> <li>• letter styles</li> <li>– tables (single/multi-column) such as calendars, announcements, agendas, programs and other types of display typing.</li> <li>• headings</li> <li>• borders</li> <li>• rulers/tabs.</li> </ul>	Use software table functions if available.
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

<b>Level:</b>	<b>Introductory</b>
<b>Theme:</b>	<b>Productivity Software</b>
<b>Prerequisite:</b>	<b>Computer Operations</b>

Students learn the basic commands and functions of computer graphic software, including bitmapped graphics (paint program) and vector graphics (draw program). Students develop basic skills in manipulating pre-made graphics as well as producing their own graphics.

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate the basic elements and principles of design by using computer software graphic tools to: <ul style="list-style-type: none"> <li>– duplicate graphic designs</li> </ul> </li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• reproduction of documents using paint/draw software programs consisting of: <ul style="list-style-type: none"> <li>– text</li> <li>– graphics (paint, draw and/or imported)</li> <li>– use of design principles.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)</i>  <i>Standard</i>  <i>Rating of 1 in the reproduction of well-designed graphic layouts</i></p>	30
<ul style="list-style-type: none"> <li>– create graphics layout</li> </ul>	<ul style="list-style-type: none"> <li>• creation of original documents using paint/draw software programs consisting of: <ul style="list-style-type: none"> <li>– text</li> <li>– graphics (paint, draw and/or imported)</li> <li>– use of design principles.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)</i>  <i>Standard</i>  <i>Rating of 1 in the production of well-designed graphic layouts</i></p>	30

## MODULE INF104: GRAPHIC TOOLS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>– demonstrate use of software functions</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• using the appropriate commands, functions and graphic tools including: <ul style="list-style-type: none"> <li>– file functions—create/save/load files</li> <li>– editing functions (cut/copy/move/paste/delete)</li> <li>– import graphic (clipart and/or scan)</li> <li>– text tools including style palette</li> <li>– paint tool (colour, fill, texture)</li> <li>– draw tools (line, rectangle, oval, cropping)</li> <li>– output functions (preview and print).</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Electronic Publishing Software Functions (INFEPSF)</i></p> <p><i>Standard</i>  <i>Rating of 1 in the demonstration of appropriate software functions</i></p>	30
<ul style="list-style-type: none"> <li>• consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>• demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  1 – Workstation Use  2 – File Management  1 – Time Management/Organization  2 – Professionalism</p>	10
<ul style="list-style-type: none"> <li>• demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>– managing learning</li> <li>– managing resources</li> <li>– communicating effectively</li> <li>– demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout



## MODULE INF104: GRAPHIC TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Software Functions and Application	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>review key features of the graphic software packages available: <ul style="list-style-type: none"> <li>capabilities</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>use help functions and references as appropriate</li> <li>demonstrate use of appropriate commands, functions and tools, such as: <ul style="list-style-type: none"> <li>copy, paste, cut</li> <li>ovals, rectangles, line and polygons</li> <li>marque, lasso</li> <li>eraser</li> <li>fills</li> <li>line options; e.g., arrows, patterns</li> <li>inserting (placing)</li> <li>resizing</li> <li>repositioning</li> <li>rulers</li> <li>column guides</li> <li>alignment</li> <li>letter spacing</li> <li>leading</li> <li>kerning</li> <li>typefaces (font, style)</li> <li>indent</li> <li>tabs</li> <li>cropping</li> </ul> </li> <li>create/load/merge/import/scan graphic elements/objects/files <ul style="list-style-type: none"> <li>presentation graphics (charting/diagramming/drawing) paint</li> <li>resident functions (clip art)</li> </ul> </li> <li>demonstrate use of tools such as: <ul style="list-style-type: none"> <li>pixel bit-mapped object-oriented images</li> <li>line/geometric object-oriented images using vector graphics</li> </ul> </li> <li>demonstrate use of computer aided design, if available <ul style="list-style-type: none"> <li>create computer graphics for design, drafting, documentation purposes</li> </ul> </li> <li>demonstrate use of screen capture/graphics conversion <ul style="list-style-type: none"> <li>integrate all forms of graphic elements including clip art design/merge/format/edit page (text/data/graphics).</li> </ul> </li> </ul>	<p>Pixel and vector graphics are two basic software approaches to the production of images and range from free drawing screen activities to computer generated/controlled graphic designed elements. Graphics software includes toolboxes, and palettes, presentations, desktop publishing, artistic creations, space exploration, weather forecasting, computer animation, and computer aided design.</p>

## MODULE INF104: GRAPHIC TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Document Production	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• practice reproducing a variety of documents from a variety of sources using paint/draw software</li> <li>• apply basic design elements and principles when creating documents</li> <li>• make use of 3-dimensional effects to create depth in documents</li> <li>• design and create various documents using paint/draw programs</li> <li>• use clipart to enhance document production</li> <li>• create own graphics using available paint and draw tools to enhance document</li> <li>• preview and print documents.</li> </ul>	<p>For example: line, shape, texture, colour, balance, proportion, contrast, harmony, unity.</p> <p>For example: use of overlapping, perspective, light and dark images, small and large images.</p> <p>For example: letterheads, business cards, advertisement, posters, title pages, logos, packaging, front view of home, floor plan, map to your home.</p>
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

## MODULE INF105 : DATABASE I

**Level:** Introductory

**Theme:** Productivity Software

**Prerequisite:** Computer Operations

**Module Parameters:** Computer workstation, disk, database software, support resources

Students are introduced to the basic commands and functions of database software and demonstrate how it can be used as a personal tool in data and information management.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>• demonstrate basic electronic database software competence by:<ul style="list-style-type: none"><li>– creating databases</li></ul></li></ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"><li>• creating database files/records to solve problems using basic database software functions:<ul style="list-style-type: none"><li>– define problem (e.g. manage information, make decisions)</li><li>– plan, design and create databases to solve problems</li><li>– enter data into database files</li><li>– display and print files</li><li>– use of appropriate software commands and functions to create database files, enter data and print.</li></ul></li></ul> <p><i>Assessment Tool</i> <i>Assessment Checklist: Database (INFDB)</i></p> <p><i>Standard</i> <i>Rating of 1 in the creation of error free, well-designed database files</i></p>	45

# **MODULE INF105: DATABASE I (continued)**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>– manipulating data and preparing reports</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• manipulating database files in the preparation of reports <ul style="list-style-type: none"> <li>– search/query database files to retrieve selected information</li> <li>– plan and present selected data visually through the creation of reports</li> <li>– use appropriate software commands and functions to query/search database files and create reports.</li> <li>– analyze data to make recommendations and conclusions</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Database (INFDB)</i></p> <p><i>Standard</i>  <i>Rating of 1 in the creation of error free, well-designed reports</i></p>	45
<ul style="list-style-type: none"> <li>• consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>• demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  1 – Workstation Use  2 – File Management  1 – Time Management/Organization  2 – Professionalism</p>	10
<ul style="list-style-type: none"> <li>• demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>– managing learning</li> <li>– managing resources</li> <li>– communicating effectively</li> <li>– demonstrating responsibility</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

## MODULE INF105: DATABASE I (continued)

Concept	Specific Learner Expectations	Notes
Software Commands and Functions	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>review key features of the database software <ul style="list-style-type: none"> <li>capabilities/applications</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>use help functions and references as appropriate</li> <li>demonstrate appropriate commands and functions to organize information in fields</li> <li>demonstrate appropriate commands and functions to input and process data: <ul style="list-style-type: none"> <li>open, create, and save database files</li> <li>enter text and values</li> <li>enter formulae to calculate and recalculate</li> <li>use number pad to enter values</li> <li>use keyboard to enter labels</li> </ul> </li> <li>demonstrate appropriate commands and functions to format fields <ul style="list-style-type: none"> <li>alignment</li> <li>number format (\$, %, decimals)</li> <li>text styles</li> <li>font type and size</li> <li>field length</li> <li>borders and shading</li> <li>formulae</li> </ul> </li> <li>demonstrate appropriate commands and functions to edit and manipulate data: <ul style="list-style-type: none"> <li>proofread, edit (cut, copy, paste, clear)</li> <li>search</li> <li>calculate</li> <li>change sequence</li> </ul> </li> <li>demonstrate appropriate commands and functions to sort data (ascending and descending) <ul style="list-style-type: none"> <li>alphabetic</li> <li>numeric</li> <li>subject</li> </ul> </li> </ul>	<p>Check data input for accuracy.</p> <p>Highlighting to change. Changing size. Update files/records. View files/split screen.</p>

# MODULE INF105: DATABASE I (continued)

Concept	Specific Learner Expectations	Notes
Software Commands and Functions (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• move through a database efficiently by using appropriate cursor movement tools and commands.</li> <li>• demonstrate appropriate commands and functions to create well formatted reports <ul style="list-style-type: none"> <li>– select and sort files for reports</li> <li>– title reports</li> <li>– calculate statistics in a reports</li> <li>– select text style, font type and size</li> <li>– determine column sequence and size</li> <li>– modify data for specific reports</li> </ul> </li> <li>• demonstrate appropriate commands and functions to retrieve, display and print information: <ul style="list-style-type: none"> <li>– form view</li> <li>– list view</li> <li>– query view</li> <li>– report view</li> <li>– print files and reports in portrait and landscape</li> </ul> </li> </ul>	<p>Move through record(s) efficiently:</p> <ul style="list-style-type: none"> <li>– cursor movement/status line/mouse</li> <li>– split screen/move between planes/remove split.</li> </ul>
Document Production	<ul style="list-style-type: none"> <li>• assess data and define problems (e.g. manage information, make decisions)</li> <li>• plan and design database files to solve problems <ul style="list-style-type: none"> <li>– identify fields (location, name and size)</li> </ul> </li> <li>• input and process data. <ul style="list-style-type: none"> <li>– create template file</li> <li>– enter data into files</li> <li>– update and edit data in files</li> </ul> </li> <li>• output reports: <ul style="list-style-type: none"> <li>– save files</li> <li>– manipulate data</li> <li>– preview records</li> <li>– print records</li> </ul> </li> <li>• demonstrate appropriate format specifications and layout to create appropriate reports.</li> <li>• analyze data to draw conclusions and make recommendations</li> <li>• cite references of data where appropriate.</li> </ul>	<p>Update files as required to add, delete and edit records.</p> <p>Topic suggestions. Personal information. Student demographics. Collections:</p> <ul style="list-style-type: none"> <li>– sports pools</li> <li>– music/tapes</li> <li>– books.</li> </ul> <p>Identify/collect/organize information/ resources.</p>



MODULE INF105: DATABASE I (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



## MODULE INF106 : SPREADSHEET I

**Level:** Introductory

**Theme:** Productivity Software

**Prerequisite:** Computer Operations

**Module Parameters:** Computer workstation, disk, spreadsheet software, support resources

Students have an opportunity to use basic functions and commands in spreadsheet software for general data manipulation and personal record keeping.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>• demonstrate basic electronic spreadsheet software competence by:<ul style="list-style-type: none"><li>– creating spreadsheets</li></ul></li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>• creating spreadsheets to solve problems using basic spreadsheet software functions<ul style="list-style-type: none"><li>– define problems (e.g. manage information, make decisions)</li><li>– plan, design and create spreadsheets to solve problem</li><li>– enter data onto spreadsheets</li><li>– preview / print spreadsheets</li><li>– use appropriate software commands and functions to create spreadsheets, enter data and print.</li></ul></li></ul> <i>Assessment Tool</i> <i>Assessment Checklist: Spreadsheet (INFSS)</i> <i>Standard</i> <i>Rating of 1 in the creation of error free, well-designed spreadsheets</i>	45
<ul style="list-style-type: none"><li>– manipulating a data and preparing chart graphs</li></ul>	<ul style="list-style-type: none"><li>• manipulating data in spreadsheets to visually present data in chart graph format<ul style="list-style-type: none"><li>– select data from spreadsheet to present in graphic format</li><li>– select appropriate graph to present data</li><li>– plan and present data visually through the creation of chart graphs</li><li>– use appropriate software commands and functions to create visually pleasing detailed graphs</li><li>– analyze data to draw conclusions and recommendations</li></ul></li></ul>	45

# MODULE INF106: SPREADSHEET I (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Spreadsheet (INFSS)</i></p> <p><i>Standard</i>  <i>Rating of 1 in the creation of error free, well-designed chart graphs</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  <i>1 – Workstation Use</i>  <i>2 – File Management</i>  <i>1 – Time Management/Organization</i>  <i>2 – Professionalism</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

## MODULE INF106: SPREADSHEET I (continued)

Concept	Specific Learner Expectations	Notes
Software Commands and Functions	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>review key features of the spreadsheet software: <ul style="list-style-type: none"> <li>capabilities/applications</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>uses help functions and references as appropriate</li> <li>demonstrate appropriate commands and functions to input and process data: <ul style="list-style-type: none"> <li>open/create/save files</li> <li>enter text (headings and labels)</li> <li>enter values (numbers, dates, time)</li> <li>enter formulae to calculate and recalculate data</li> <li>replicate cells/formulae</li> <li>use number pad—values</li> <li>use keyboard—labels</li> </ul> </li> <li>demonstrate appropriate commands and functions to format cells, rows, columns: <ul style="list-style-type: none"> <li>alignment</li> <li>number format (\$, %, decimals)</li> <li>text styles</li> <li>font types/sizes</li> <li>column widths/row heights</li> <li>borders/shading</li> </ul> </li> <li>demonstrate appropriate commands and functions to enter basic formulae using <ul style="list-style-type: none"> <li>operators (+, -, *, and /)</li> <li>number, constant values (e.g. 1, 10, 12.5, -16)</li> <li>cell and range references (e.g. A10, A1:A25)</li> <li>functions (e.g. sum, avg., min/max)</li> <li>copy/paste or fill functions</li> </ul> </li> <li>demonstrate appropriate commands and functions to edit cells, rows, columns, data: <ul style="list-style-type: none"> <li>moving data and formulae</li> <li>copying</li> <li>clearing</li> <li>replacing</li> </ul> </li> <li>demonstrate appropriate commands and functions to sort data (ascending, descending): <ul style="list-style-type: none"> <li>numeric</li> <li>alphabetic</li> </ul> </li> </ul>	<p>Create a spreadsheet by</p> <ul style="list-style-type: none"> <li>identifying an application</li> <li>designing the format.</li> </ul> <p>Potential projects:</p> <ul style="list-style-type: none"> <li>personal worksheets</li> <li>budgets</li> <li>recipes</li> <li>grades records</li> <li>inventories</li> <li>financial problem solving</li> <li>table comparisons</li> </ul>

# MODULE INF106: SPREADSHEET I (continued)

Concept	Specific Learner Expectations	Notes
Software Commands and Functions (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• move through worksheet(s) efficiently by using appropriate cursor movement tools/commands: <ul style="list-style-type: none"> <li>– split screen</li> <li>– freeze</li> </ul> </li> <li>• use appropriate software commands and functions to create visually pleasing detailed graphs <ul style="list-style-type: none"> <li>– name/update/open charts</li> <li>– label axes</li> <li>– select colours and patterns</li> <li>– label legends, titles and subtitles</li> <li>– select fonts (types and sizes)</li> <li>– use gridlines and borders</li> <li>– change page and margin settings</li> </ul> </li> <li>• demonstrate appropriate commands and functions to output results: <ul style="list-style-type: none"> <li>– display worksheets and graphs:</li> <li>– print worksheet and chart graphs <ul style="list-style-type: none"> <li>• portrait</li> <li>• landscape</li> </ul> </li> </ul> </li> <li>• use appropriate headers/footers/references</li> </ul>	
Document Production	<ul style="list-style-type: none"> <li>• access data and define problems (manage information and make decisions)</li> <li>• plan and design spreadsheets to solve problems <ul style="list-style-type: none"> <li>– identify columns and rows (location, name, size)</li> </ul> </li> <li>• input and process data <ul style="list-style-type: none"> <li>– create worksheet template</li> <li>– enter data into spreadsheet</li> <li>– update and edit data on worksheet</li> </ul> </li> <li>• output data <ul style="list-style-type: none"> <li>– print worksheets in alternate formats (portrait and landscape)</li> <li>– create visual presentations of data through chart graphs <ul style="list-style-type: none"> <li>• select data from spreadsheets to present in graphic format</li> <li>• select appropriate chart graphs</li> <li>• plan and present data in chart graphs</li> </ul> </li> </ul> </li> </ul>	



# MODULE INF106: SPREADSHEET I (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• analyze data to draw conclusions and recommendations</li> <li>• print chart graphs in alternative formats</li> <li>• cite references of data where appropriate</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



<b>Level:</b>	<b>Introductory</b>
<b>Theme:</b>	<b>Dynamic Environment</b>
<b>Prerequisite:</b>	<b>Computer Operations</b>

Students develop basic skills with tools used for computerized presentations involving text, data, graphics, sounds and animation.

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate basic hypermedia software competence by:               <ul style="list-style-type: none"> <li>– accessing hypermedia tools</li> </ul> </li> <li>– applying hypermedia tools to produce a short presentation</li> <li>– using hypermedia tools to edit a short presentation</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• production of a short presentation consisting of the following:               <ul style="list-style-type: none"> <li>– demonstrate ability to use software commands and functions of selected hypermedia software program</li> <li>– make decisions regarding text, sound, graphics, video and animation</li> <li>– prepare a storyboard</li> </ul> </li> <li>• producing the presentation by using appropriate software commands and functions to               <ul style="list-style-type: none"> <li>– create, enhance, and manipulate text</li> <li>– create, select, and manipulate graphics</li> <li>– create, select, and manipulate sound</li> <li>– insert pre-made video clip</li> <li>– create a frame, object or cell-based animation clip</li> </ul> </li> <li>• editing the presentation by               <ul style="list-style-type: none"> <li>– proofreading for spelling and accuracy of facts</li> <li>– check graphics</li> <li>– test program links to make sure they work appropriately</li> <li>– edit to enhance the quality of the presentation</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Multimedia Software Functions (INFMMSF) and Multimedia Production and Presentation (INFMMDOC)</i></p> <p><i>Standard</i>  <i>Rating of 1 in the production of presentation</i></p>	<p>20</p> <p>50</p> <p>20</p>

## MODULE INF107: HYPERMEDIA TOOLS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  <i>1 – Workstation Use</i>  <i>2 – File Management</i>  <i>1 – Time Management/Organization</i>  <i>2 – Professionalism</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Multimedia Skills	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>access hypermedia program</li> <li>tour program with direction</li> <li>select and use teacher-specified program components</li> <li>complete tasks assigned covering accessing and manipulating: <ul style="list-style-type: none"> <li>text</li> <li>data</li> <li>graphics</li> <li>sound</li> <li>animation.</li> </ul> </li> </ul>	<p>Skills are built in this part of the module that can be applied in the production of the presentation.</p> <p>Teachers will need to determine the extent of the skill development required by their students.</p>

## MODULE INF107: HYPERMEDIA TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Multimedia Application	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• produce a short presentation using the following process: <ul style="list-style-type: none"> <li>– identify project</li> <li>– design storyboard</li> <li>– determine components (text, sound, graphics, video, animation)</li> <li>– collect required support resources</li> <li>– produce presentation</li> <li>– present presentation.</li> </ul> </li> </ul>	Students should be able to produce a simple presentation with limited assistance. Teachers will need to determine the minimum skill requirements.
Multimedia Software Commands	<ul style="list-style-type: none"> <li>• apply hypermedia software commands to: <ul style="list-style-type: none"> <li>– load/create/customize/modify multimedia presentation</li> </ul> </li> <li>• enter data: <ul style="list-style-type: none"> <li>– key load data</li> <li>– create/import graphics</li> <li>– access/manipulate presentation components</li> <li>– create background</li> <li>– edit/modify/update buttons, cards, fields</li> <li>– use resident commands/scripting to link pages</li> <li>– incorporate text (alphabetic, numeric), graphics, motion, sound</li> </ul> </li> <li>• display/print/export: <ul style="list-style-type: none"> <li>– pages/components</li> <li>– report on stored information.</li> </ul> </li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> </ul>	

**MODULE INF107: HYPERMEDIA TOOLS (continued)**

Concept	Specific Learner Expectations	Notes
Workstation Management (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	



## MODULE INF108 : PROGRAMMING I

**Level:** Introductory

**Theme:** Object-Oriented, Procedure-Oriented Programming

**Prerequisite:** Computer Operations

**Module Parameters:** Workstation, programming language, language code manual, support resources

Students are introduced to computer programming languages and a structured programming environment and will construct algorithms and code instructions to solve identified problems.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>• demonstrate basic computer programming skill by:<ul style="list-style-type: none"><li>– creating algorithms to solve problems</li><li>– applying introductory structured computer coding programming skills</li></ul></li></ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"><li>• developing programs which demonstrate the ability to solve problems through the efficient use of algorithms and language syntax. Demonstrate ability to:<ul style="list-style-type: none"><li>– use a linear algorithm to provide a solution to a problem</li><li>– arrange the components of the problem in the categories of input, process and output</li><li>– interpret the output required</li><li>– use language-specific techniques to assign values to variables and constants</li><li>– employ language-specific mathematical operators for addition, subtraction, multiplication, division</li><li>– illustrate language-specific structures for output formatting</li><li>– test specific data to verify the validity of the program</li><li>– document program internally and externally</li></ul></li></ul> <p><i>Assessment Tools</i> <i>Assessment Checklist: Introductory and Intermediate Programming (INFPRGM1)</i> <i>Sample Assignment: Programming IA (INFPSAM1)</i></p> <p><i>Standard</i> <i>Rating of 1 in all phases of program development</i></p>	90

# MODULE INF108: PROGRAMMING I (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  <i>1 – Workstation Use</i>  <i>2 – File Management</i>  <i>1 – Time Management/Organization</i>  <i>2 – Professionalism</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Computer Software	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>explain how software is the interface between humans and computer hardware and converts general-purpose computers into specialized problem-solving systems</li> <li>describe the purpose of system software: <ul style="list-style-type: none"> <li>operating systems (command-driven, icon-driven)</li> <li>language translators (assemblers, compilers, interpreters)</li> <li>utilities (pre-programmed functions)</li> </ul> </li> <li>describe application software: <ul style="list-style-type: none"> <li>application packages (text, data, graphics, process control, simulations)</li> <li>customized programs (written for specific organizational function)</li> </ul> </li> </ul>	

## MODULE INF108: PROGRAMMING I (continued)

Concept	Specific Learner Expectations	Notes
Computer Software (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>differentiate between integrated and dedicated software</li> <li>research sources of software availability: <ul style="list-style-type: none"> <li>externally</li> <li>internally (in-house development/organizational processing)</li> </ul> </li> <li>examine software resource support: <ul style="list-style-type: none"> <li>user's manual</li> <li>operating instructions</li> <li>copyright contract</li> </ul> </li> <li>discuss the purpose of a computer programming language</li> <li>describe computer programming language categories: <ul style="list-style-type: none"> <li>machine-oriented</li> <li>procedure-oriented</li> <li>object-oriented</li> </ul> </li> <li>identify several computer languages/structures and their focus</li> <li>compare several computer language instructions: <ul style="list-style-type: none"> <li>similarities</li> <li>differences.</li> </ul> </li> <li>identify data types/strings</li> <li>describe constants, variables</li> <li>discuss methods of program data input: <ul style="list-style-type: none"> <li>embed data in program</li> <li>read a data file</li> <li>enter interactively</li> </ul> </li> <li>explain data manipulation/processing: <ul style="list-style-type: none"> <li>operators</li> <li>decision control</li> <li>branching</li> <li>looping</li> </ul> </li> </ul>	Buy lease, shareware, network/electronic bulletin board, retail outlets, computer manufacturers, magazines, professional association, user groups

## MODULE INF108: PROGRAMMING I (continued)

Concept	Specific Learner Expectations	Notes
Computer Software (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• illustrate various formats for data/information output: <ul style="list-style-type: none"> <li>– text reports</li> <li>– data tables</li> <li>– graphics</li> </ul> </li> <li>• explain the differences between programming and code cutting.</li> </ul>	
Algorithms	<ul style="list-style-type: none"> <li>• describe the purpose of an algorithm</li> <li>• discuss flowchart symbols</li> <li>• analyze a structured design</li> <li>• identify/describe the problem</li> <li>• list each step required to solve the problem</li> <li>• develop the appropriate logic to achieve the solution</li> <li>• create a structured schematic/flowchart or pseudocode indicating how the solution will be achieved.</li> </ul>	
Structured Programming	<ul style="list-style-type: none"> <li>• differentiate between syntax and logic</li> <li>• describe/illustrate examples of structured programming and indicate why it is important:</li> <li>• top-down programming</li> <li>• explain structured programming constructs:</li> <li>• sequence, selection</li> <li>• repetition.</li> </ul>	

## MODULE INF108: PROGRAMMING I (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Programming Applications	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• code simple programming tasks (i.e., I/P/O program following predefined format)</li> <li>• prepare simple displays of text/data/font graphics</li> <li>• key/code simple computer program(s) to solve simple problem(s): <ul style="list-style-type: none"> <li>– identify logical solution</li> <li>– flowchart the algorithms</li> <li>– design output format</li> <li>– code the instructions</li> <li>– test run program</li> <li>– debug/edit</li> <li>– execute program</li> <li>– assess activities/results.</li> </ul> </li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	





## MODULE CURRICULUM AND ASSESSMENT STANDARDS: SECTION E: INTERMEDIATE LEVEL

The following pages define the curriculum and assessment standards for the intermediate level of Information Processing.

Intermediate level modules help students build on the competencies developed at the introductory level and focus on developing more complex competencies. They provide a broader perspective, helping students recognize the wide range of related career opportunities available within the strand.

Module INF201:	Workstation Operations .....	E.3
Module INF202:	Electronic Bulletin Board Systems .....	E.9
Module INF203:	Keyboarding II .....	E.13
Module INF204:	Keyboarding III .....	E.17
Module INF205:	Word Processing II .....	E.21
Module INF206:	Electronic Publishing I .....	E.25
Module INF207:	Database II .....	E.31
Module INF208:	Spreadsheet II .....	E.35
Module INF209:	Correspondence .....	E.39
Module INF210:	Reports .....	E.43
Module INF211:	Tables/Forms .....	E.47
Module INF212:	Document Production I .....	E.53
Module INF213:	Multimedia Authoring I .....	E.57
Module INF214:	Process Control .....	E.61
Module INF215:	Programming II .....	E.65
Module INF216:	Programming III .....	E.71
Module INF217:	Programming IV .....	E.79
Module INF218:	Programming V .....	E.85



## MODULE INF201: WORKSTATION OPERATIONS

**Level:** Intermediate

**Theme:** System Operations

**Prerequisite:** Computer Operations

**Module Parameters:** Computer workstation, disk, utility software, support resources

Students learn computer workstation operations including computer architecture, peripherals, configurations, operating system environments and platforms, utility software, diagnostic and protection software, hard drive file updating and maintenance, support resource application, and troubleshooting activities.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>utilize file management procedures efficiently</li><li>install and use software to support and maintain the integrity of workstation hardware</li></ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"><li>a workstation project demonstrating the ability to<ul style="list-style-type: none"><li>set up and install a system<ul style="list-style-type: none"><li>identify need of users and tools (software, hardware)</li><li>design a plan for installation and configuration of the system</li><li>organize tools for installation and configuration</li><li>make use of a manuals during the set-up and installation process</li><li>connect hardware (e.g. system and cabling)</li><li>install software (well-organized and appropriately named directories on specified drive) for a variety of software including operating system, applications and utilities</li></ul></li></ul></li></ul> <p><i>Assessment Tools</i> <i>Assessment Guide: Workstation Operations, Set Up and Install a System (INF201-1)</i></p> <p><i>Standard</i> <i>Rating of 2 in each applicable task</i></p>	50

## MODULE INF201: WORKSTATION OPERATIONS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• configure and maintain workstation hardware</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>– trouble shoot software and hardware <ul style="list-style-type: none"> <li>• test system after installation</li> <li>• test system with users for satisfaction</li> <li>• build a defense system against viruses</li> <li>• build a defense system against intentional and unintentional use exploration</li> <li>• identify and organize available resources for users (e.g. help, tutorials, manuals, courseware)</li> </ul> </li> <li>– manage and maintain a system <ul style="list-style-type: none"> <li>• outline long-term plan for upgrading technology</li> <li>• establish policy and procedures of effective use of the technology</li> <li>• provide training and support for those using system</li> </ul> </li> </ul> <p><i>Assessment Tools</i>  <i>Assessment Guide: Workstation Operations (INF201-1)</i>  <i>Standard</i>  <i>Rating of 2 in each applicable task</i></p>	40
<ul style="list-style-type: none"> <li>• consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>• demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i>  <i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p>	10
<ul style="list-style-type: none"> <li>• demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>– managing learning</li> <li>– managing resources</li> <li>– communicating effectively</li> <li>– demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

## MODULE INF201: WORKSTATION OPERATIONS (continued)

Concept	Specific Learner Expectations	Notes
Software Installation and Use	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• install/update software: <ul style="list-style-type: none"> <li>– create/use directories/folders backup/restore files</li> <li>– save/load files in various formats</li> </ul> </li> <li>• use appropriate operating system software commands for: <ul style="list-style-type: none"> <li>– defaults/supervising/housekeeping</li> </ul> </li> <li>• use utilities software: <ul style="list-style-type: none"> <li>– pre-established routines</li> <li>– diagnostic</li> <li>– viral protection</li> <li>– communications</li> <li>– shell</li> <li>– spooler</li> </ul> </li> <li>• use application software: <ul style="list-style-type: none"> <li>– integrated/independent software</li> <li>– windows</li> <li>– menus/icons</li> <li>– help screens</li> </ul> </li> <li>• use language translators: <ul style="list-style-type: none"> <li>– assemblers</li> <li>– compilers</li> <li>– interpreters</li> </ul> </li> <li>• load software application packages/customized programs</li> <li>• recommend software applications: <ul style="list-style-type: none"> <li>– identify system requirements for various software packages.</li> </ul> </li> </ul>	Computer information processing systems consist of specific activities—input, process, output, storage. However, each of these functions involves the interface of various hardware components integrally supported by a variety of software programs all integrated into a particular operating system.
Hardware Configuration and Use	<ul style="list-style-type: none"> <li>• configure/interface hardware/peripherals, communication protocols: <ul style="list-style-type: none"> <li>– arrange physical placement of peripherals/components</li> <li>– connect/disconnect/reconnect communication lines</li> </ul> </li> <li>• compare architecture/functions of computer processing systems (both standalone and network): <ul style="list-style-type: none"> <li>– processors</li> <li>– input/output hardware</li> </ul> </li> </ul>	



## MODULE INF201: WORKSTATION OPERATIONS (continued)

Concept	Specific Learner Expectations	Notes
Hardware Configuration and Use (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>– storage components/capacity</li> <li>– interface protocols</li> <li>– clock speed</li> <li>– physical dimensions</li> <li>– size</li> <li>• describe/use available computer platforms: <ul style="list-style-type: none"> <li>– DOS</li> <li>– UNIX</li> <li>– Apple, etc.</li> </ul> </li> </ul>	
Policies and Procedures	<ul style="list-style-type: none"> <li>• follow established troubleshooting procedures for: <ul style="list-style-type: none"> <li>– diagnosis</li> <li>– remediation</li> </ul> </li> <li>• describe effective policies and procedures for: <ul style="list-style-type: none"> <li>– system/software access</li> <li>– security/protection</li> <li>– data integrity</li> <li>– obsolescence</li> <li>– ethical considerations</li> <li>– legal constraints</li> <li>– managing environmentally friendly routines <ul style="list-style-type: none"> <li>• paper disposal</li> <li>• toner/ribbon</li> <li>• old equipment.</li> </ul> </li> </ul> </li> </ul>	Follow hardware/software and educational instructions.

**MODULE INF201: WORKSTATION OPERATIONS** (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



## MODULE INF202: ELECTRONIC BULLETIN BOARD SYSTEMS

**Level:** Intermediate

**Theme:** Systems Operations

**Prerequisite:** Computer Operations

**Corequisite:** Workstation Operations (recommended)

**Module Parameters:** Access to modem, telephone line, null modem cable

This module provides an opportunity for students to learn to operate and maintain an EBB system(s), including proper use of hardware, software, peripherals, interface protocols, telecommunication equipment, data transmission characteristics and messaging parameters.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>demonstrate basic EBB system competencies as:<ul style="list-style-type: none"><li>a user</li></ul></li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>access a variety of existing EBB services efficiently, following established etiquette for procedures. <i>Assessment Tools (to be developed)</i> <i>Instrument Tool</i></li></ul>	20
<ul style="list-style-type: none"><li>an operator/manager</li></ul>	<ul style="list-style-type: none"><li>provide efficient EBB system service by<ul style="list-style-type: none"><li>configuring hardware</li><li>installing software</li><li>maintaining files</li><li>troubleshooting and diagnosing problems</li><li>offering user support services</li><li>monitoring/updating messages.</li></ul><i>Assessment Tools (to be developed)</i> <i>Peer Evaluation</i></li></ul>	40
<ul style="list-style-type: none"><li>a technician</li></ul>	<ul style="list-style-type: none"><li>given available resources, student will design and build a functional EBB system <i>Assessment Tools (to be developed)</i> <i>Exemplar Product</i></li></ul>	30

## MODULE INF202: ELECTRONIC BULLETIN BOARD SYSTEMS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Bulletin Board Operations	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>identify basic hardware components and processes necessary to access a bulletin board</li> <li>compare various bulletin board systems in terms of: <ul style="list-style-type: none"> <li>information type</li> <li>cost</li> <li>applications</li> </ul> </li> <li>identify and apply appropriate security codes</li> <li>access information from existing EBB systems: <ul style="list-style-type: none"> <li>in-house facilities</li> <li>local area facilities</li> <li>long distance facilities.</li> </ul> </li> </ul>	<p>An electronic bulletin board is a dedicated computer that provides a multi-user messaging services. Access can be made by entering appropriate passwords or security codes via remotely located computers that have modems connected to telephone lines. The user can download and upload messages as well as use the system for E-mail communication purposes.</p>

## MODULE INF202: ELECTRONIC BULLETIN BOARD SYSTEMS (continued)

Concept	Specific Learner Expectations	Notes
Bulletin Board Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• configure interface/hardware/peripherals</li> <li>• install appropriate system software</li> <li>• install backup/restore files: <ul style="list-style-type: none"> <li>– create/use directories/folders</li> <li>– incorporate file protection</li> <li>– create/delete messages</li> </ul> </li> <li>• apply manager's responsibilities <ul style="list-style-type: none"> <li>– update board messages</li> <li>– monitor access/activities</li> <li>– schedule assistance activities</li> <li>– schedule assistance activities</li> <li>– provide assistance</li> <li>– evaluate performance</li> <li>– recommend changes</li> <li>– determine parameters/update messages</li> </ul> </li> <li>• maintain-update application, operating system and utility software on hard drive: <ul style="list-style-type: none"> <li>– use defaults, supervisor housekeeping, diagnostic, viral protection software</li> </ul> </li> <li>• demonstrate acceptable EBB system operational performance</li> <li>• perform troubleshooting: <ul style="list-style-type: none"> <li>– diagnosis</li> <li>– remediation</li> </ul> </li> <li>• use support manuals/documentation</li> <li>• follow hardware/software and school/educational regulations</li> <li>• adhere to legal, professional and ethical expectations</li> <li>• establish policies and procedures.</li> </ul>	Consider apprenticeship or student contract for hands-on experiences.



## MODULE INF202: ELECTRONIC BULLETIN BOARD SYSTEMS (continued)

Concept	Specific Learner Expectations	Notes
Bulletin Board Management (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>identify electronic bulletin board system specifications that addresses: <ul style="list-style-type: none"> <li>reasons/conditions to establish network</li> <li>the structure of a bulletin board system</li> <li>hardware/software selection</li> <li>recommend network topologies/training requirements</li> <li>identify financial considerations</li> <li>ergonomic factors</li> </ul> </li> <li>design a function EBB system</li> <li>assemble and operationalize an EBB system.</li> </ul>	Use existing/available school/community hardware and software resources and establish either a classroom-based, school-based or district-based EBB system.
Workstation Management	<ul style="list-style-type: none"> <li>apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>good health and safety (posture, positioning of hardware and furniture)</li> <li>security for hardware, software, supplies and personal work</li> </ul> </li> <li>demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>start-up procedures</li> <li>organization of work area</li> <li>closing procedures</li> </ul> </li> <li>apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>plan activities</li> <li>organize data, information, resources</li> <li>consider alternatives</li> <li>evaluate activities/results</li> </ul> </li> <li>use related terminology to describe basic processes, procedures and tools.</li> </ul>	

## MODULE INF203: KEYBOARDING II

**Level:** Intermediate

**Theme:** Text/Data Input

**Prerequisite:** Keyboarding I

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module enhances the students' personal use keyboarding competencies by increasing the rate of accurate touch-keystroking of the alphabet and numbers and selected punctuation keys.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>demonstrate keyboarding competence<ul style="list-style-type: none"><li>text entry (30 wpm)</li><li>numeric entry (100 kpm)</li><li>technique</li></ul></li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>3 timed-writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding :<ul style="list-style-type: none"><li>on alphabetic keys<ul style="list-style-type: none"><li>two-minute duration</li><li>maximum 1 uncorrected error</li><li>SI <math>\leq 1.25</math></li><li>minimum keystroke rate: 30 words a minute</li></ul></li><li>on numeric keys:<ul style="list-style-type: none"><li>one minute duration</li><li>maximum 1 uncorrected error</li><li>100 numeric keystrokes a minute on 1 to 3 digit numbers</li></ul></li></ul></li></ul> <i>Assessment Tool</i> <i>Reference Chart: Keyboarding and Numberpad Rates (INFKEYNB)</i> <ul style="list-style-type: none"><li>observations over the last quarter of the learning period, during timings and drill work.</li></ul> <i>Assessment Tool</i> <i>Assessment Checklist: Text-Data Entry (INFTDENT)</i> <i>Standard</i> <i>Rating of:</i> <ul style="list-style-type: none"><li>3– Eye Focus</li><li>3 – Keystroking</li><li>2 – Service Keys</li><li>3 – Body Position</li></ul>	<div>50</div> <div>10</div> <div>30</div>

## MODULE INF203: KEYBOARDING II (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>            2 – Workstation Use            3 – File Management            2 – Time Management/Organization            3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing:               <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Text Entry	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate increasingly rapid, accurate touch keystroking on straight copy of:               <ul style="list-style-type: none"> <li>alphabetic keys</li> <li>number keys</li> <li>punctuation keys (.,:;?'"()!-_)</li> <li>symbol keys \$., &amp;, %</li> <li>service keys (enter, shift, delete, backspace, tab)</li> </ul> </li> <li>use function and cursor movement keys efficiently</li> </ul>	<p>Develop speed and accuracy at the phrase, sentence and short paragraph level using short, repetitive timings (12 seconds to 1 minute) with straight copy text of varying SI. (1.0–1.4).</p>

## MODULE INF203: KEYBOARDING II (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate correct keystroking technique: <ul style="list-style-type: none"> <li>– enter text using designated fingers</li> <li>– maintain home-row anchor position</li> <li>– demonstrate correct posture (hands, arms, body)</li> </ul> </li> <li>• proofread and edit text (screen and hard copy) to ensure text is without error</li> <li>• analyze errors and initiate remediation as appropriate for <ul style="list-style-type: none"> <li>– spelling, shifting, punctuation and spacing errors</li> <li>– transposed, repeated, omitted letters.</li> </ul> </li> </ul>	
Data Entry	<ul style="list-style-type: none"> <li>• demonstrate rapid, accurate data entry on keyboard number pad: <ul style="list-style-type: none"> <li>– using designated fingers</li> <li>– maintaining anchor position.</li> </ul> </li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



**MODULE INF204: KEYBOARDING III**

**Level:** Intermediate

Theme: Text/Data Input

**Prerequisite:**            **Keyboarding II**

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module enhances the students' keyboarding competencies by increasing the rate of accurate touch-keystroking of alphabetic, numeric and all punctuation keys to support personal use and limited entry-level workplace opportunities.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate keyboarding competence</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• 3 timed-writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding :               <ul style="list-style-type: none"> <li>– on alphabetic keys                   <ul style="list-style-type: none"> <li>• two minute duration</li> <li>• maximum 1 uncorrected error</li> <li>• SI 1.2 – 1.35</li> <li>• minimum keystroke rate: 40 words a minute</li> </ul> </li> <li>– on numeric keys:                   <ul style="list-style-type: none"> <li>• one minute duration</li> <li>• maximum 1 uncorrected error</li> <li>• 120 numeric keystrokes a minute on 1 to 4 digit numbers</li> </ul> </li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Reference Chart: Keyboarding and Numberpad Rates (INFKEYNB)</i></p>	<p>50</p>
<ul style="list-style-type: none"> <li>– text entry (40 wpm)</li> </ul>		
<ul style="list-style-type: none"> <li>– numeric entry (120 kpm)</li> </ul>		10
<ul style="list-style-type: none"> <li>– technique</li> </ul>	<p><i>Assessment Tool</i>  <i>Assessment Checklist: Text-Data Entry (INFTDENT)</i></p> <p><i>Standard</i>  <i>Rating of:</i>            4 – Eye Focus            3 – Keystroking            2 – Service Keys            3 – Body Position</p>	30



## MODULE INF204: KEYBOARDING III (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Text Entry	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate increasingly rapid, accurate touch keystroking on straight copy of: <ul style="list-style-type: none"> <li>alphanumeric keys</li> <li>all punctuation keys</li> <li>service keys (enter, shift, backspace, tab)</li> </ul> </li> <li>use function and cursor movement keys efficiently</li> <li>demonstrate correct keystroking technique: <ul style="list-style-type: none"> <li>enter text using designated fingers</li> <li>maintain home-row anchor position</li> <li>demonstrate correct posture (hands, arms body)</li> </ul> </li> <li>proofread and edit text (screen and hard copy) to ensure text is error free</li> </ul>	<p>Develop speed and accuracy at the phrase, sentence and short paragraph level using short, repetitive timings (.5 to 1 minute) with straight copy text of varying SI. (1.2–1.5).</p>

**MODULE INF204: KEYBOARDING III** (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	<i>The student should:</i> <ul style="list-style-type: none"><li>• analyze errors and initiate remediation as appropriate for:<ul style="list-style-type: none"><li>– spelling, shifting, punctuation and spacing errors</li><li>– transposed, repeated, omitted letters.</li></ul></li></ul>	
Data Entry	<ul style="list-style-type: none"><li>• demonstrate rapid, accurate data entry on keyboard number pad:<ul style="list-style-type: none"><li>– using designated fingers</li><li>– maintaining anchor position.</li></ul></li></ul>	
Workstation Management	<ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	



**MODULE INF205: WORD PROCESSING II**

**Level:** Intermediate

Theme: Productivity Software

**Prerequisites:**      **Keyboarding I**  
                              **Word Processing I**  
                              **(Keyboarding II recommended corequisite)**

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

Students expand their skills in using word-processing software commands and functions to produce mailable reports, correspondence (including letters and memos) and tables from rough draft copy.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate correct use of software functions by producing mailable, well- formatted :</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• producing mailable documents, based on formatted and unformatted sources focusing on the continued learning and improved use of software functions through personal and business applications including a collection of</li> </ul>	
<ul style="list-style-type: none"> <li>– reports, paginated with headers, footers and title pages</li> </ul>	<ul style="list-style-type: none"> <li>– reports containing:               <ul style="list-style-type: none"> <li>• headings and subheadings</li> <li>• headers/footers</li> <li>• outline</li> <li>• display paragraph</li> <li>• title page</li> <li>• references (footnotes, endnotes, bibliography).</li> </ul> </li> </ul>	30
<ul style="list-style-type: none"> <li>– letters with special notations in a designated letter style</li> </ul>	<ul style="list-style-type: none"> <li>– letters containing basic letter parts plus:               <ul style="list-style-type: none"> <li>• special notations</li> <li>• a specified style</li> <li>• a subject line</li> <li>• an attention line.</li> </ul> </li> </ul>	20
<ul style="list-style-type: none"> <li>– memoranda</li> </ul>	<ul style="list-style-type: none"> <li>– memoranda containing:               <ul style="list-style-type: none"> <li>• basic memo parts</li> <li>• use of a memorandum style.</li> </ul> </li> </ul>	10

## MODULE INF205: WORD PROCESSING II (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>– multi-column tables with borders and footnotes</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>– multi-column tables containing: <ul style="list-style-type: none"> <li>• main titles and subtitles</li> <li>• column heads</li> <li>• borders</li> <li>• footnotes</li> <li>• sorted</li> <li>• box/ruled.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Word Processing INFWP)</i></p> <p><i>Standard</i>  <i>Rating of 2 in the production of mailable documents (no errors in text and well-format)</i></p>	30
<ul style="list-style-type: none"> <li>• consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>• demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p>	10
<ul style="list-style-type: none"> <li>• demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>– managing learning</li> <li>– managing resources</li> <li>– communicating effectively</li> <li>– demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

## MODULE INF205: WORD PROCESSING II (continued)

Concept	Specific Learner Expectations	Notes
Basic Software Functions and Applications	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>review key features of the word-processing software package <ul style="list-style-type: none"> <li>capabilities</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>demonstrate improvement in the use of previously learned software functions</li> <li>use help functions and references as appropriate.</li> <li>move through document(s) efficiently by using appropriate cursor movement tools/commands.</li> </ul>	<p>This is important if using a different word processing software package</p> <p>Arrows, select, undo, goto.</p>
New Software Functions and Applications	<ul style="list-style-type: none"> <li>demonstrate skill in the use of additional software functions including: <ul style="list-style-type: none"> <li>columns and tables</li> <li>footnotes/endnotes</li> <li>drawing tools</li> <li>inserting graphics in boxes</li> <li>preset macros</li> <li>create simple macros</li> <li>templates</li> <li>autotext</li> <li>mail merges</li> <li>envelopes and labels features</li> <li>basic math calculations</li> <li>other formatting functions such as style gallery auto format, auto table</li> <li>additional auto functions such as table of contents, figures, index, outlines</li> </ul> </li> </ul>	



## MODULE INF205: WORD PROCESSING II (continued)

Concept	Specific Learner Expectations	Notes
Document Production	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate appropriate key commands to produce the following documents in mailable form: <ul style="list-style-type: none"> <li>– reports <ul style="list-style-type: none"> <li>• headings/subheading</li> <li>• references (footnotes, end notes, bibliography)</li> <li>• headers/footers</li> <li>• displayed paragraphs</li> <li>• title page</li> </ul> </li> <li>– outlines</li> <li>– personal and business correspondence <ul style="list-style-type: none"> <li>• letter parts (date, inside address, salutations, complimentary closing, name/title, references)</li> <li>• letter styles</li> <li>• subject/attention lines</li> <li>• special notations</li> </ul> </li> <li>– memorandum <ul style="list-style-type: none"> <li>• memo parts</li> <li>• memo styles</li> </ul> </li> <li>– tables (single/multi-column) <ul style="list-style-type: none"> <li>• headings</li> <li>• borders/shading</li> <li>• rulers/tabs.</li> </ul> </li> </ul> </li> </ul>	<p>Mailable form: error-free and well- formatted.</p> <p>Print documents in both portrait, landscape.</p> <p>Use software table functions.</p>
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

**MODULE INF206: ELECTRONIC PUBLISHING I**

**Level:** Intermediate

**Theme:** Productivity Software

**Prerequisite:** Word Processing I, Graphics Tools

**Module Parameters:** Computer workstation, disk, electronic/desktop publishing software, support resources

This module provides an opportunity for students to develop skill using electronic/desktop publishing software to create a variety of camera-ready documents.

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>• demonstrate basic electronic publishing software competence by:<ul style="list-style-type: none"><li>– using page make-up tools and commands to produce camera-ready publications</li></ul></li></ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"><li>• reproducing accurate, well-designed one and two page camera-ready publications focusing on the use of basic software functions and layout principles including<ul style="list-style-type: none"><li>– use of basic formatting functions</li><li>– use of page make-up tools (including pointer, line, text, rectangle, oval, cropping, etc.)</li><li>– basic editing functions</li><li>– layout principles such as optical centre, balance, white space, columns, Z pattern, contrast, rhythm, unity</li></ul></li></ul> <p><i>Assessment Tools</i></p> <p><i>Assessment Checklist: Electronic Publishing Software Functions (INFEPSF)</i></p> <p><i>Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)</i></p> <p><i>Standard</i></p> <p><i>Rating of 2 in the production of accurate, well-designed publications</i></p>	<p>45</p>

# MODULE INF206: ELECTRONIC PUBLISHING I (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>creating accurate, well designed one and two page original publications focusing on continued use of basic software functions and layout principles including <ul style="list-style-type: none"> <li>text (body and display)</li> <li>graphics and/or artwork</li> <li>text and graphic enhancement</li> <li>the following of copyright laws</li> <li>layout principles such as optical centre, balance, white space, columns, Z pattern, contrast, rhythm, unity</li> </ul> </li> </ul> <p><i>Assessment Tools</i>  <i>Assessment Checklist: Electronic Publishing Software Functions (INFEPSF)</i>  <i>Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)</i></p> <p><i>Standard</i>  <i>Rating of 2 in the production of accurate, well-designed publications</i></p>	45
<ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p>	10
<ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

**MODULE INF206: ELECTRONIC PUBLISHING I (continued)**

Concept	Specific Learner Expectations	Notes
Software Functions and Applications	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>review key features of the desktop software package: <ul style="list-style-type: none"> <li>capabilities</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>assess the factors that affect desktop publishing layout: <ul style="list-style-type: none"> <li>budget considerations</li> <li>time constraints</li> <li>nature of audience/message</li> <li>conditions of presentation</li> </ul> </li> <li>describe links/economies between typesetting-publishing and desktop publishing applications</li> <li>demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>open/create files/templates</li> <li>enter text/graphics <ul style="list-style-type: none"> <li>scan/import file</li> <li>merge</li> <li>cut and paste</li> </ul> </li> <li>name files.</li> </ul> </li> <li>use help functions and references as appropriate.</li> <li>demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>format text <ul style="list-style-type: none"> <li>graphics on screen ruler guides</li> <li>columns, borders, margins</li> <li>gutters, baselines</li> <li>alignment, hyphenation</li> <li>letter spacing, kerning, line spacing</li> <li>typefaces (font, style, size)</li> <li>graphics (placement, adjustment)</li> <li>indents and tabs</li> <li>linking text/graphics</li> <li>linking text/graphics</li> <li>book publication</li> <li>graphics (TIFF, ESP, scanned, line art, halftones, gray scales, colour defaults, one-colour)</li> </ul> </li> <li>proofread, edit text (enhance, enlarge, crop, size, scale)</li> </ul> </li> <li>move through document(s) efficiently by using appropriate cursor movement tools/commands</li> </ul>	<p>Compare a variety of:</p> <ul style="list-style-type: none"> <li>desktop publishing</li> <li>analyze/evaluate</li> <li>distinguishing</li> <li>characteristics</li> </ul> <p>Evaluate software for integration capability with desktop publishing applications:</p> <ul style="list-style-type: none"> <li>word processing</li> <li>spreadsheet</li> <li>database</li> <li>chart graphics</li> <li>presentation graphics.</li> </ul> <p>Identify data input (text and graphics) sources.</p> <p>Access available typefaces, clip art.</p> <p>Desktop applications:</p> <ul style="list-style-type: none"> <li>personal documents</li> <li>class assignments</li> <li>signs, announcements, invitations, advertisements</li> <li>brochures (single-, folded-page)</li> <li>school newsletter, newspaper, yearbook</li> <li>community activities</li> <li>business applications.</li> </ul>

**MODULE INF206: ELECTRONIC PUBLISHING I (continued)**

Concept	Specific Learner Expectations	Notes
Software Functions and Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• customize/edit graphics objects/files plan/create customized desktop templates: <ul style="list-style-type: none"> <li>– grid-based</li> <li>– placeholder</li> </ul> </li> </ul>	
Document Production (Output)	<ul style="list-style-type: none"> <li>• demonstrate ability to recreate and create well-designed publications through the use of page layout principles such as <ul style="list-style-type: none"> <li>– white space</li> <li>– optical centre</li> <li>– balance, formal and informal</li> <li>– 3-D effects</li> <li>– Z pattern</li> <li>– contrast / harmony</li> <li>– rhythm</li> <li>– unity</li> </ul> </li> <li>• demonstrate ability to produce accurate publications through the use of proofreading skills</li> <li>• demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>– save/export desktop publishing and graphics</li> <li>– display files in a variety of formats</li> <li>– print documents</li> </ul> </li> <li>• demonstrate appropriate key commands to produce documents in various desktop published and graphics forms.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> </ul>	

**MODULE INF206: ELECTRONIC PUBLISHING I (continued)**

Concept	Specific Learner Expectations	Notes
Workstation Management (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	





**MODULE INF207: DATABASE II****Level: Intermediate****Theme: Productivity Software****Prerequisite: Database I****Module Parameters: Computer workstation, disk, database software, support resources**

Students use all the commands and functions of electronic database software that support effective and efficient database applications.

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>demonstrate advanced level electronic database software competence by:<ul style="list-style-type: none"><li>creating hierarchical and relational databases</li></ul></li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>creating database files/records to solve problems using more advanced database software functions:<ul style="list-style-type: none"><li>define problem (e.g. manage information, make decisions)</li><li>plan, design and create databases to solve problems</li><li>enter data into database files</li><li>create links to other database files</li><li>display and print files</li><li>use of more advanced software commands and functions to create database files, enter data, and print.</li></ul></li></ul> <i>Assessment Tool</i> <i>Assessment Checklist: Database (INFDB)</i> <i>Standard</i> <i>Rating of 2 in the creation of error free, well-designed database files.</i>	40
<ul style="list-style-type: none"><li>importing and manipulating data and preparing reports</li></ul>	<ul style="list-style-type: none"><li>manipulating database files in the preparation of reports<ul style="list-style-type: none"><li>link a database file to one or more databases</li><li>search/query database files to retrieve selected information</li><li>plan and present selected data visually through the creation of reports</li><li>use appropriate software commands and functions to search/query database files and create reports.</li><li>analyze data to make recommendations and conclusions</li></ul></li></ul> <i>Assessment Tool</i> <i>Assessment Checklist: Database (INFDB)</i> <i>Standard</i> <i>Rating of 2 in the creation of error free, well-designed reports</i>	50

## MODULE INF207: DATABASE II (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Basic Software Commands and Functions	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>review key features of the database software package: <ul style="list-style-type: none"> <li>capabilities</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>demonstrate improvement in the use of previously learned software functions</li> <li>use help functions and references as appropriate</li> <li>demonstrate appropriate commands and functions to organize information in fields</li> </ul>	

**MODULE INF207: DATABASE II** (continued)

Concept	Specific Learner Expectations	Notes
Basic Software Commands and Functions (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate appropriate commands and functions to input and process data</li> <li>• move through a database efficiently by using appropriate cursor movement tools and commands.</li> </ul>	
New Software Commands and Functions	<ul style="list-style-type: none"> <li>• compare “dbase” models: <ul style="list-style-type: none"> <li>– hierarchical</li> <li>– relational</li> </ul> </li> <li>• format file design parameters: <ul style="list-style-type: none"> <li>– field, record</li> <li>– file parameters</li> </ul> </li> <li>• demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>– use query language commands to access information</li> <li>– create/import data</li> <li>– incorporate macros</li> </ul> </li> <li>• create graphic data representations: <ul style="list-style-type: none"> <li>– proofread, edit data</li> <li>– edit graphic representations</li> </ul> </li> <li>• demonstrate appropriate key commands and functions to link database files to one or more databases.</li> </ul>	<p>Command key/mouse</p> <ul style="list-style-type: none"> <li>– manual</li> <li>– reference texts</li> <li>– help.</li> </ul>
Manipulating Data and Preparing Reports	<ul style="list-style-type: none"> <li>• assess data and define problems (e.g. manage information, make decisions)</li> <li>• plan and design database files to solve problems <ul style="list-style-type: none"> <li>– identify fields (location, name and size)</li> </ul> </li> <li>• input and process data. <ul style="list-style-type: none"> <li>– create template file</li> <li>– enter data into files</li> <li>– update and edit data in files</li> </ul> </li> <li>• link one or more databases</li> <li>• merge a database with other documents</li> </ul>	<p>Topic ideas:</p> <ul style="list-style-type: none"> <li>– community data</li> <li>– libraries</li> <li>– agricultural inventories</li> <li>– business inventories</li> <li>– help features</li> <li>– flexibility</li> <li>– user friendly</li> <li>– response time.</li> </ul>

MODULE INF207: DATABASE II (continued)

Concept	Specific Learner Expectations	Notes
Manipulating Data and Preparing Reports (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• query a database to find: <ul style="list-style-type: none"> <li>– selected records that meet several conditions</li> <li>– selected records that do not match a specific condition</li> <li>– use mathematical operators/functions to query</li> <li>– use wildcards in a query</li> <li>– use dates in a query</li> </ul> </li> <li>• output reports: <ul style="list-style-type: none"> <li>– save files</li> <li>– manipulate data</li> <li>– preview records</li> <li>– print records</li> </ul> </li> <li>• demonstrate appropriate format specifications and layout to create appropriate reports</li> <li>• analyze data to draw conclusions and make recommendations</li> <li>• cite references of data where appropriate.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

**MODULE INF208: SPREADSHEET II**

Level: Intermediate

**Theme: Productivity Software**

Prerequisite: Spreadsheet I

**Module Parameters:** Computer workstation, disk, spreadsheet software, support resources

Students demonstrate advanced level spreadsheet commands and functions to calculate and manipulate data and prepare appropriate printouts and reports in text and graphic format.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate advanced level electronic spreadsheet software competence by: <ul style="list-style-type: none"> <li>– creating spreadsheets, including importing data</li> </ul> </li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• creating spreadsheets to solve problems using more advanced spreadsheet software functions <ul style="list-style-type: none"> <li>– define problems (e.g., manage information, make decisions)</li> <li>– plan, design and create spreadsheets to solve problem</li> <li>– enter data onto spreadsheets</li> <li>– preview/print spreadsheets</li> <li>– use appropriate software commands and functions to create spreadsheets, enter data and print.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Spreadsheet (INFSS)</i></p> <p><i>Standard</i>  <i>Rating of 2 in the creation of error free, well-designed spreadsheets</i></p>	40
<ul style="list-style-type: none"> <li>– manipulating data and preparing charts</li> </ul>	<ul style="list-style-type: none"> <li>• manipulating data in spreadsheets to visually present data in chart graph format <ul style="list-style-type: none"> <li>– select data from spreadsheet to present in graphic format</li> <li>– select appropriate chart graph to present data</li> <li>– plan and present data visually through the creation of chart graphs</li> <li>– use appropriate software commands and functions to create visually pleasing detailed graphs</li> <li>– analyze data to draw conclusions and recommendations</li> <li>– print reports (portrait and landscape).</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Spreadsheet (INFSS)</i></p> <p><i>Standard</i>  <i>Rating of 2 in the creation of error free, well-designed spreadsheets</i></p>	50



## MODULE INF208: SPREADSHEET II (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Basic Software Commands and Functions	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>review key features of the spreadsheet software package: <ul style="list-style-type: none"> <li>capabilities</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>uses help functions and references as appropriate</li> <li>demonstrate improvement in the use of previously learned software functions</li> <li>move through document(s) efficiently by using appropriate cursor movement tools/commands</li> </ul>	

## MODULE INF208: SPREADSHEET II (continued)

Concept	Specific Learner Expectations	Notes
Advanced Software Commands and Functions	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate appropriate key commands to produce spreadsheets that emphasize the ability to predict/forecast using “what-if” scenarios.</li> <li>• demonstrate appropriate key commands to import data</li> <li>• demonstrate appropriate key commands to merge data with other documents</li> <li>• incorporate macros to: <ul style="list-style-type: none"> <li>– edit data</li> <li>– copy/cut/paste</li> <li>– sort</li> <li>– move data and formats</li> <li>– copy data and formats</li> <li>– clear cells, rows and columns</li> <li>– replace cells, rows and columns</li> </ul> </li> <li>• use template feature</li> <li>• enhance and modify chart graphs by: <ul style="list-style-type: none"> <li>– changing marker shapes on line graphs</li> <li>– exploding a pie chart</li> <li>– mixing a line and bar graph</li> <li>– merging with another document.</li> </ul> </li> </ul>	<p>Identify application(s).</p> <p>Collect/organize information/resources.</p> <p>Design alternative formats/structures.</p> <p>Plan/execute activities.</p> <p>Critique results.</p> <p>Compare the effectiveness of various spreadsheet designs.</p> <p>Calculate/recalculate.</p>
Document Production	<ul style="list-style-type: none"> <li>• access data and define problems (manage information and make decisions)</li> <li>• plan and design spreadsheets to solve problems <ul style="list-style-type: none"> <li>– identify columns and rows (location, name, size)</li> <li>– incorporate the ability of the spreadsheet to predict/forecast using “what if” scenarios</li> </ul> </li> <li>• input and process data <ul style="list-style-type: none"> <li>– create worksheet template</li> <li>– enter data into spreadsheet</li> <li>– update and edit data on worksheet</li> </ul> </li> <li>• output data <ul style="list-style-type: none"> <li>– print worksheets in alternate formats (portrait and landscape)</li> <li>– create visual presentations of data through chart graphs <ul style="list-style-type: none"> <li>• select data from spreadsheets to present in graphic format</li> </ul> </li> </ul> </li> </ul>	<p>Incorporate “what-if” possibilities for:</p> <ul style="list-style-type: none"> <li>– travel expenses</li> <li>– problem-solving applications</li> <li>– election predictions, design/cost decision</li> <li>– feed analysis.</li> </ul>

**MODULE INF208: SPREADSHEET II (continued)**

Concept	Specific Learner Expectations	Notes
Document Production (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• select appropriate chart graphs</li> <li>• plan and present data in chart graphs</li> <li>• analyze data to draw conclusions and recommendations</li> <li>• print chart graphs in alternative formats</li> <li>• cite references of data where appropriate.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

## MODULE INF209: CORRESPONDENCE

**Level:** Intermediate

**Theme:** Applied Processing

**Pre/corequisite:** Word Processing II, Keyboarding II

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

Students expand their rate of document production as they prepare various forms of correspondence in mailable form, using word-processing software.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>• demonstrate efficient word-processing of correspondence through the production of:<ul style="list-style-type: none"><li>– mailable correspondence in a variety of formats under time constraints</li></ul></li></ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"><li>• a collection of produced correspondence consisting of<ul style="list-style-type: none"><li>– preparation of mailable correspondence under time constraints appropriate for complexity of task, based on unformatted sources.</li><li>– a minimum expected keyboarding competency of 30 wpm based on Keyboarding II competency</li><li>– designing and creating of templates, macros, and/or autotext for a variety of correspondence</li><li>– production of letters in a variety of styles from unformatted sources including all basic letter parts plus<ul style="list-style-type: none"><li>• mailing and special notations</li><li>• attention and subject lines</li><li>• displayed information</li><li>• enclosure and copy notations</li><li>• second page headings</li></ul></li><li>– merging letters with multiple records</li><li>– production of memoranda from unformatted sources</li><li>– production of a set of labels and envelopes</li><li>– print and/or e-mail correspondence</li></ul></li></ul> <p><i>Assessment Tools:</i> <i>Assessment Checklist: Correspondence, Reports, Tables (INFCRT)</i> <i>Sample Correspondence Test (to be developed)</i></p> <p><i>Standard</i> <i>Rating of 2, error-free and well-formatted, under time constraints appropriate for complexity of task</i></p>	70

## MODULE INF209: CORRESPONDENCE (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>– ability to edit and format correspondence</li> <li>• consistently apply appropriate workstation routines</li> <li>• demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• editing of existing documents to produce error-free, well-formatted correspondence</li> </ul> <p><i>Assessment Tools</i>  <i>Assessment Checklist: Correspondence (INFCRT)</i></p> <p><i>Standard</i>  <i>Rating of 2, error-free and well-formatted,</i></p> <ul style="list-style-type: none"> <li>• demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>– managing learning</li> <li>– managing resources</li> <li>– communicating effectively</li> <li>– demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>20</p> <p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Document Creation	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate efficient and accurate keystroking and software commands used to open and name files and to produce mailable documents</li> <li>• enter text from <b>formatted</b> copy in which text is: <ul style="list-style-type: none"> <li>– error free</li> <li>– draft, edited</li> <li>– unedited</li> </ul> </li> </ul>	<p>Types of correspondence:</p> <ul style="list-style-type: none"> <li>• letters <ul style="list-style-type: none"> <li>– one page</li> <li>– multi-page</li> </ul> </li> <li>• memorandums</li> <li>• facsimile cover sheets</li> <li>• envelopes/labels.</li> </ul>



## MODULE INF209: CORRESPONDENCE (continued)

Concept	Specific Learner Expectations	Notes
Document Creation (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>plan layout and enter text from <b>unformatted</b> copy in which text is: <ul style="list-style-type: none"> <li>error free</li> <li>draft, edited</li> <li>unedited.</li> </ul> </li> </ul>	<p>Styles</p> <ul style="list-style-type: none"> <li>informal</li> <li>formal.</li> </ul>
Document Manipulation and Editing	<ul style="list-style-type: none"> <li>demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>edit and manipulate text</li> <li>replicate, convert and append files</li> <li>prepare templates, macros and autotext</li> <li>paginate documents</li> </ul> </li> <li>move through document(s) efficiently by using appropriate cursor movement tools/commands</li> <li>use help functions and references as appropriate.</li> <li>proofread documents for additional accuracy and formatting.</li> </ul>	<p>Use software-based editing tools such as spell check, thesaurus, grammar check, cut, copy and paste</p>
Document Production	<ul style="list-style-type: none"> <li>clarify the purpose of the correspondence: <ul style="list-style-type: none"> <li>target audience</li> <li>internal/external</li> <li>single/multiple copy</li> </ul> </li> <li>demonstrate appropriate key commands to produce and edit mailable letters and memoranda, including the following features: <ul style="list-style-type: none"> <li>designing and creating templates, macros and/or autotext for a variety of correspondence</li> <li>letter parts (date, inside/return addresses, salutations, complimentary closing, name/title, references)</li> <li>letter styles</li> <li>punctuation styles</li> <li>placement</li> <li>letterhead</li> <li>mailing notations</li> <li>address (labels, envelopes)</li> <li>second page headings</li> <li>display paragraphs (e.g. enumerations)</li> <li>form letters / mail merge</li> </ul> </li> <li>demonstrate appropriate key commands to print and save documents using alternative formats.</li> <li>use electronic mail to send letters and memos to teacher</li> </ul>	<p>All documents should be in mailable form:</p> <ul style="list-style-type: none"> <li>no errors</li> <li>well-formatted.</li> </ul> <p>Design letterheads, form letters, closings, memo templates</p>



**MODULE INF209: CORRESPONDENCE** (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply correct workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li><li>– decision making<ul style="list-style-type: none"><li>• plan activities</li><li>• organize data/information/resources</li><li>• consider alternatives</li></ul></li><li>– evaluate activities/results</li></ul></li><li>• use related terminology accurately to describe basic processes, procedures and tools.</li></ul>	

**MODULE INF210: REPORTS****Level: Intermediate****Theme: Applied Processing****Pre/corequisite: Word Processing II, Keyboarding II****Module Parameters: Computer workstation, disk, word-processing software, support resources**

Students expand their rate of production as they prepare various reports and manuscripts in mailable form.

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>• demonstrate efficient word-processing of reports/manuscripts through the production of:<ul style="list-style-type: none"><li>– mailable reports in a variety of formats under time constraints</li></ul></li></ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"><li>• a collection of produced reports consisting of<ul style="list-style-type: none"><li>– preparation of mailable reports/manuscripts under time constraints appropriate for complexity of task, based on unformatted sources.</li><li>– a minimum expected keyboarding competency of 30 wpm based on Keyboarding II competency</li><li>– designing and creating of templates, macros, and/or autotext for a variety of reports</li><li>– production of reports from unformatted sources including the following features<ul style="list-style-type: none"><li>• title pages</li><li>• title/headings/subheadings/side headings</li><li>• table of contents</li><li>• outlines</li><li>• display paragraphs/quotes</li><li>• multi column</li><li>• charts and/or tables</li><li>• headers/footers</li><li>• page numbering</li><li>• citations (footnotes, endnotes, within body)</li><li>• reference lists and/or bibliographies</li><li>• appendices</li><li>• indexes</li></ul></li><li>– print and/or e-mail reports</li></ul></li></ul> <p><i>Assessment Tools</i> <i>Assessment Checklist: Correspondence, Reports, Tables (INFCRT)</i> <i>Sample Report Test (to be developed)</i></p> <p><i>Standard</i> <i>Rating of 2, error-free and well-formatted, under time constraints appropriate for complexity of task</i></p>	70

## MODULE INF210: REPORTS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>– ability to edit and format reports</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• editing of existing documents to produce error-free, well-formatted reports.</li> </ul> <p><i>Assessment Tools</i>  <i>Assessment Checklist: Correspondence (INFCRT)</i></p> <p><i>Standard</i>  <i>Rating of 2, error-free and well-formatted,</i></p>	20
<ul style="list-style-type: none"> <li>• consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>• demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p>	10
<ul style="list-style-type: none"> <li>• demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>– managing learning</li> <li>– managing resources</li> <li>– communicating effectively</li> <li>– demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

## MODULE INF210: REPORTS (continued)

Concept	Specific Learner Expectations	Notes
Document Creation	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate efficient and accurate keystroking and software commands used to open and name files and to produce mailable documents</li> <li>• enter text from <b>formatted</b> copy in which text is: <ul style="list-style-type: none"> <li>– error free</li> <li>– draft, edited</li> <li>– unedited</li> </ul> </li> <li>• plan layout and enter text from <b>unformatted</b> copy in which text is: <ul style="list-style-type: none"> <li>– error free</li> <li>– draft, edited</li> <li>– unedited.</li> </ul> </li> </ul>	
Document Manipulation and Editing	<ul style="list-style-type: none"> <li>• demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>– edit and manipulate text</li> <li>– replicate, convert and append files</li> <li>– prepare templates, macros and autotext</li> <li>– paginate documents</li> </ul> </li> <li>• move through document(s) efficiently by using appropriate cursor movement tools/commands</li> <li>• use help functions and references as appropriate.</li> <li>• proofread documents for additional accuracy and formatting</li> </ul>	Use software-based editing tools such as spell check, thesaurus, grammar check, cut, copy and paste
Document Production	<ul style="list-style-type: none"> <li>• clarify the purpose of the report: <ul style="list-style-type: none"> <li>– target audience</li> <li>– internal/external</li> <li>– single/multiple copy</li> </ul> </li> <li>• demonstrate appropriate key commands to produce mailable reports, including the following features: <ul style="list-style-type: none"> <li>– title page</li> <li>– titles/headings/subheadings</li> <li>– table of contents</li> <li>– outlines</li> <li>– bound/unbound formats</li> <li>– columns</li> <li>– display paragraphs/quotes/emergations</li> <li>– headers/footers</li> <li>– citations (footnotes, reference list, bibliography)</li> <li>– appendices/indexes</li> </ul> </li> </ul>	<p>All documents should be in mailable form :no errors well-formatted.</p> <p>commonly used styles: APA (American Psychological Association or MLA (Modern Language Association)</p>

**MODULE INF210: REPORTS** (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	<i>The student should:</i> <ul style="list-style-type: none"><li>• demonstrate appropriate key commands to print and save documents using alternative formats.</li><li>• use electronic mail to send reports to teacher.</li></ul>	
Workstation Management	<ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	

## MODULE INF211: TABLES/FORMS

**Level:** Intermediate

**Theme:** Applied Processing

**Pre/corequisite:** Word Processing II, Keyboarding II

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

Students expand their rate of document production as they prepare various tables/forms in mailable form.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>• demonstrate efficient word-processing of tables/forms competence by the:<ul style="list-style-type: none"><li>– production of mailable tables in a variety of formats under time constraints</li></ul></li></ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"><li>• a collection of produced tables consisting of<ul style="list-style-type: none"><li>– preparation of mailable tables under time constraints appropriate for complexity of task based on unformatted sources.</li><li>– a minimum expected keyboarding competency of 30 wpm based on Keyboarding II competency</li><li>– designing and creating of templates, macros, and/or autotext for a variety of tables</li><li>– production of tables from unformatted sources including the following features<ul style="list-style-type: none"><li>• headings and subheading (multi-line)</li><li>• borders/shading</li><li>• cell appearances (e.g. fonts, alignment)</li><li>• math calculations</li><li>• supplemental data (e.g. footnotes)</li><li>• dot leaders</li><li>• table sorts</li></ul></li><li>– print and/or e-mail tables</li></ul></li></ul> <p><i>Assessment Tools:</i> <i>Assessment Checklist: Correspondence, Reports, Tables (INFCRT)</i> <i>Sample Tables Test (to be developed)</i></p> <p><i>Standard</i> <i>Rating of 2, error-free and well-formatted, under time constraints appropriate for complexity of task</i></p>	40



## MODULE INF211: TABLES/FORMS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>– ability to design a mailable form for a specific purpose and audience</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• a collection of produced forms consisting of               <ul style="list-style-type: none"> <li>– preparation of mailable forms under time constraints appropriate for complexity of task based on unformatted sources.</li> <li>– a minimum expected keyboarding competency of 30 wpm based on Keyboarding II competency</li> <li>– design, create and use templates for a variety of business forms such as                   <ul style="list-style-type: none"> <li>• invoices/credit memos</li> <li>• purchase requisitions/orders</li> <li>• statements of account</li> <li>• employee applications</li> <li>• fax cover sheets</li> </ul> </li> <li>– print and/or e-mail forms</li> </ul> </li> </ul> <p><i>Assessment Tools</i>  <i>Assessment Checklist: Correspondence, Reports, Tables (INFCRT)</i>  <i>Sample Forms assessment (to be developed)</i></p> <p><i>Standard</i>  <i>Rating of 2, error-free and well-formatted, under time constraints appropriate for complexity of task</i></p>	30
<ul style="list-style-type: none"> <li>– ability to edit and format tables and forms</li> </ul>	<ul style="list-style-type: none"> <li>• editing of existing documents to produce error-free, well-formatted reports.</li> </ul> <p><i>Assessment Tools</i>  <i>Assessment Checklist: Correspondence (INFCRT)</i></p> <p><i>Standard</i>  <i>Rating of 2, error-free and well-formatted</i></p>	20
<ul style="list-style-type: none"> <li>• consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>• demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>            2 – Workstation Use            3 – File Management            2 – Time Management/Organization            3 – Professionalism</p>	10

MODULE INF211: TABLES/FORMS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Document Creation	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate efficient and accurate keystroking and software commands used to open and name files and to produce mailable documents</li> <li>enter text from <b>formatted</b> copy in which text is: <ul style="list-style-type: none"> <li>error free</li> <li>draft, edited</li> <li>unedited</li> </ul> </li> <li>plan layout and enter text from <b>unformatted</b> copy in which text is: <ul style="list-style-type: none"> <li>error free</li> <li>draft, edited</li> <li>unedited.</li> </ul> </li> </ul>	
Document Manipulation and Editing	<ul style="list-style-type: none"> <li>demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>edit and manipulate text</li> <li>replicate, convert and append files</li> <li>prepare templates, macros and autotext</li> <li>paginate documents</li> </ul> </li> <li>move through document(s) efficiently by using appropriate cursor movement tools/commands</li> <li>use help functions and references as appropriate.</li> <li>proofread documents for additional accuracy and formatting</li> </ul>	<p>Use software-based editing tools such as spell check, thesaurus, grammar check, cut, copy and paste</p>

## MODULE INF211: TABLES/FORMS (continued)

Concept	Specific Learner Expectations	Notes
Document Production	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• clarify the purpose of the table/form: <ul style="list-style-type: none"> <li>– target audience</li> <li>– internal/external</li> <li>– single/multiple copy</li> </ul> </li> <li>• demonstrate appropriate key commands to produce mailable single and multi-column tables, including the following features: <ul style="list-style-type: none"> <li>– headings, subheadings (multi-line)</li> <li>– borders/shading</li> <li>– cell attributes (fonts, justification)</li> <li>– special options (sort, split/join cells)</li> <li>– rulers/tabs</li> <li>– supplemental data (e.g., footnotes)</li> <li>– parallel columns</li> <li>– merged table (display paragraphs)</li> <li>– math calculations</li> <li>– dot leaders</li> <li>– table sorts</li> </ul> </li> <li>• plan/create templates for commonly used forms (purchase order, statement, etc.)</li> <li>• demonstrate appropriate key commands to enter data and produce mailable forms, including the following examples: <ul style="list-style-type: none"> <li>– interoffice memorandums</li> <li>– facsimile cover sheets</li> <li>– invoices</li> <li>– purchase orders</li> <li>– credit memos</li> <li>– application for employment</li> <li>– account statements</li> </ul> </li> <li>• demonstrate appropriate key commands to print and save documents using alternative formats.</li> <li>• use electronic mail to send tables and forms to teacher</li> </ul>	<p>All document should be in mailable form:</p> <ul style="list-style-type: none"> <li>• no errors</li> <li>• well-formatted.</li> </ul>

MODULE INF211: TABLES/FORMS (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



**MODULE INF212: DOCUMENT PRODUCTION I****Level: Intermediate****Theme: System Operations****Pre/corequisite: Keyboarding I, Word Processing I, Spreadsheet I, Database I****Module Parameters: Computer workstation, disk, word-processing software, support resources**

This module provides an opportunity for students to develop document production skills requiring the integration of data, text and graphics.

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>demonstrate word-processing and data management systems/graphics software integration competence by:<ul style="list-style-type: none"><li>producing mailable word-processing documents that integrate data, text and presentation graphics in a variety of specific applications</li></ul></li><li>consistently apply appropriate workstation routines</li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>production of documents (enter, format, edit and print) from unedited, unformatted sources that integrate data, text, and graphics. Documents should make use of the following types of software<ul style="list-style-type: none"><li>word processing</li><li>spreadsheet</li><li>database</li><li>graphics (paint and draw, clipart files)</li></ul></li><li>editing of existing documents to produce error-free, well-formatted document</li></ul> <i>Assessment Tool</i> <i>Assessment Checklist: Document Production I and II (INF DOCPR)</i> <i>Standard:</i> <i>Rating of I in the production of accurate and well-formatted documents</i> <ul style="list-style-type: none"><li>demonstrating appropriate workstation routines.</li></ul> <i>Assessment Tool</i> <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i> <i>Standard</i> <i>Rating of:</i> <ul style="list-style-type: none"><li>2 – Workstation Use</li><li>3 – File Management</li><li>2 – Time Management/Organization</li><li>3 – Professionalism</li></ul>	<div>60</div> <div>30</div> <div>10</div>



## MODULE INF212: DOCUMENT PRODUCTION I (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

Concept	Specific Learner Expectations	Notes
Document Production	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>follow instructions to customize/personalize existing text and data files</li> <li>load, redesign/reformat, modify existing templates/files containing information from database, spreadsheet, graphics files</li> <li>apply word-processing, database, spreadsheet commands as appropriate to import and merge documents into word-processing files</li> <li>manipulate word-processing, database, spreadsheet, graphics software to produce mailable documents from drafts: <ul style="list-style-type: none"> <li>edited, formatted</li> <li>edited, unformatted</li> <li>unedited, unformatted.</li> </ul> </li> </ul>	
Document Editing	<ul style="list-style-type: none"> <li>format/revise documents to be aesthetically pleasing and well-formatted</li> <li>clarify the purpose of the document: <ul style="list-style-type: none"> <li>target audience</li> <li>single/multiple/presentation copy</li> </ul> </li> <li>print and save documents.</li> </ul>	

## MODULE INF212: DOCUMENT PRODUCTION I (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



## MODULE INF213: MULTIMEDIA AUTHORIZING I

**Level:** Intermediate

**Theme:** Dynamic Environment

**Pre/corequisite:** Hypermedia Tools

**Module Parameters:** Computer workstation, software, support resources

This module introduces multimedia software and provides an opportunity to develop basic authoring competence by accessing and integrating software resident text, video, audio clips.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate multimedia authoring competence by using software resident text, video, audio clips: <ul style="list-style-type: none"> <li>use software-specific commands to access and manipulate text video and audio</li> <li>develop multimedia presentation</li> </ul> </li> <li>consistently apply appropriate workstation routines</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>planning, producing, editing and testing of a one-minute multimedia presentation that includes text, video and audio with individual components supporting a common theme. <ul style="list-style-type: none"> <li>identify, import and modify textual material</li> <li>identify, import and modify graphics</li> <li>identify, import and modify video clips</li> <li>identify, import and modify audio clips</li> <li>identify, import and modify animation clips</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Multimedia Software Functions (INFMMSF)</i>  <i>Assessment Checklist: Multimedia Production and Presentation (INFMMDOC)</i></p> <p><i>Standard</i>  <i>Rating of 2</i></p>	<p>40</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p>
	<ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p>	<p>10</p>

## MODULE INF213: MULTIMEDIA AUTHORIZING I (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

Concept	Specific Learner Expectations	Notes
Multimedia Authoring Software Skills	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate ability to use identified multimedia software in the planning of a presentation which includes the importing and modification of <ul style="list-style-type: none"> <li>text</li> <li>graphics</li> <li>video</li> <li>sound</li> <li>animation</li> </ul> </li> <li>identify, locate and access resident text, video, graphics, audio and animation files</li> <li>identify and select software commands for predetermined purpose (e.g., image creation, sequencing, timing rates).</li> </ul>	
Multimedia Authoring Presentation	<ul style="list-style-type: none"> <li>follow planning steps in preparing a multimedia presentation</li> <li>prepare a storyboard, outlining the presentations content and special effects for a particular theme</li> <li>make decisions regarding text, sound, graphics, video and animation</li> <li>choose and use appropriate tools, commands and devises</li> <li>apply software commands</li> </ul>	Create presentations for other courses such as English, Science, Art, Marketing and Management

## MODULE INF213: MULTIMEDIA AUTHORIZING I (continued)

Concept	Specific Learner Expectations	Notes
Multimedia Authoring Presentation (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• create/save multimedia authored file</li> <li>• key/import, customize/modify text, video, audio, animation source clips</li> <li>• establish window arrangements (characteristic, parameters)</li> <li>• follow accepted principles of layout and design</li> <li>• address the following clip considerations: <ul style="list-style-type: none"> <li>– name, type, frame size, duration, sound quality</li> </ul> </li> <li>• edit the sequence (text, video, audio tracks)</li> <li>• edit construction window, clip window</li> <li>• preview segments, tracks, sequence</li> <li>• display output, run project sequence</li> <li>• print/export file(s).</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	





## MODULE INF214: PROCESS CONTROL

**Level:** Intermediate

**Theme:** Dynamic Environment

**Pre/corequisite:** Computer Operations (Hypermedia Tools recommended pre/corequisite)

**Module Parameters:** Computer workstation, software, support resources

Students develop skills in robotics/simulation software control by creating/modifying/using programs that incorporate computer-controlled movements/events in robotics/simulation activities/applications.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>demonstrate basic electronic process control software competence by:<ul style="list-style-type: none"><li>explaining the theory and processes used to control a robot and/or other simulation</li><li>construct a robot or cause a robot to function as intended through computer control</li></ul></li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>a presentation (oral, written, or visual) explaining basic mechanics and principles of robotics and robotic control.<ul style="list-style-type: none"><li>describe the types of tasks robots perform</li><li>explain how robotics are effecting society now and in the future</li><li>diagram a basic robot, labeling components including the controller</li><li>describe the functions of labeled components</li><li>explain the processes used to control robots</li><li>give an example of when it would be feasible to use a robot over a human to perform a task</li><li>give an example of when it would be feasible to use a human over a robot to perform a task</li></ul></li></ul> <i>Assessment Tool</i> <i>Assessment Guide: Process Control Project (INF214-1)</i> <i>Sample Assignment: Process Control (INFPCSAM)</i> <i>Standard</i> <i>Rating of 2 in each applicable task</i>	25
	<ul style="list-style-type: none"><li>programming a robot. Assemble and program a robot to perform a specific task.<ul style="list-style-type: none"><li>describe the task the robot will perform</li><li>follow a blue print design</li><li>program the robot</li><li>assess the design capabilities of the completed robot</li><li>test the functionality of the robot to perform task</li><li>correct any flaws</li></ul></li></ul>	50

## MODULE INF214: PROCESS CONTROL (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate robot functionality. <ul style="list-style-type: none"> <li>describe the purpose of the robot</li> <li>demonstrate the use of robot to perform task</li> <li>explain how the interrupts are used to control the robot</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Guide: Process Control Project (INF214-1)</i>  <i>Sample Assignment: Process Control (INFPCSAM)</i></p> <p><i>Standard</i>  <i>Rating of 2 in each applicable task</i></p>	15
<ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  2 – Workstation Use  3 – File Management  2 – Time Management/Organization  3 – Professionalism</p>	10
<ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

**MODULE INF214: PROCESS CONTROL** (continued)

Concept	Specific Learner Expectations	Notes
Robotic Theory	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe the types of tasks robots perform</li> <li>• explain how robotics are effecting society now and in the future</li> <li>• diagram a basic robot, labeling components including the controller</li> <li>• describe the functions of labeled components</li> <li>• explain the processes used to control robots</li> <li>• give examples of the types of software used to instruct the controller</li> <li>• give an example of when it would be feasible to use a robot over a human to perform a task</li> <li>• give an example of when it would be feasible to use a human over a robot to perform a task</li> </ul>	
Computer Operations Skills	<ul style="list-style-type: none"> <li>• identify, access and use teacher-specified process control software</li> <li>• use commands and functions to control robot(s) in teacher-specified exercises.</li> </ul>	
Robotics/Simulation Project	<ul style="list-style-type: none"> <li>• design and implement a robotics and/or other computer simulation by following a procedure such as: <ul style="list-style-type: none"> <li>– identify software/application(s)</li> <li>– determine/design algorithm parameters</li> <li>– collect required support resources</li> <li>– input data</li> <li>– apply animation/robotics software commands</li> <li>– load/create/customize/modify robotics/simulation files(s)</li> </ul> </li> <li>• demonstrate animation/robotic capability</li> <li>• display/print/export <ul style="list-style-type: none"> <li>– animation/robotics file.</li> </ul> </li> </ul>	

**MODULE INF214: PROCESS CONTROL** (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	

<b>Level:</b>	Intermediate
<b>Theme:</b>	Programming
<b>Prerequisite:</b>	Programming I

Students have an opportunity to increase programming skills by designing and generating programming code to handle decision-making and repetitive processes.

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate basic computer programming skill by: <ul style="list-style-type: none"> <li>– creating algorithms to solve problems involving decision making and iteration</li> </ul> </li> <li>– constructing computer programs involving decision making and iterative processes</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• developing programs which (using either procedure or object-oriented programming) demonstrate the efficient use of algorithms and language syntax. Demonstrate the ability to: <ul style="list-style-type: none"> <li>– distinguish conditions within problems that require decision-making and repetitive calculations/operations</li> <li>– examine and create problems in which decision-making conditions exist</li> <li>– examine the repetitive pattern that exists in the problem and distinguish between pre-test and post-test iterative structures and predetermined iterative conditions</li> <li>– examine and create problems that define a predetermined number of repetitions</li> <li>– examine and create problems requiring pre-check/post-check iterative structures.</li> </ul> </li> <li>– construct commands that will increment and decrement variable values based on patterns recognized in the problem</li> <li>– differentiate and apply language-specific reserved words for predefined, pre-check and post-check iterative operations</li> <li>– differentiate and apply language-reserved words for decision-making structures</li> <li>– differentiate and apply language-specific relational/logic operators in decision-making and iterative structures.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Introductory and Intermediate Programming (INFPRGM1)</i>  <i>Sample Assignment: Programming 2A</i></p>	<p>45</p> <p>45</p>



## MODULE INF215: PROGRAMMING II (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <p><i>Standard</i>  <i>Rating of 2 in the creation and presentation of programs</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>            2 – Workstation Use            3 – File Management            2 – Time Management/Organization            3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing:               <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

### Part A: Procedure-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>identify/describe the problem</li> <li>list each step required to solve the problem</li> <li>develop the appropriate logic to achieve the solution</li> <li>apply structured programming constructs to create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	<p>Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.</p>

## MODULE INF215: PROGRAMMING II (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• use constants, variables, data structures, operands</li> <li>• use reserved words, commands, statements, operators</li> <li>• input data using reserved words: <ul style="list-style-type: none"> <li>– embedded/read/enter data</li> </ul> </li> <li>• process data: <ul style="list-style-type: none"> <li>– calculations/manipulations/decision control/branching/looping</li> </ul> </li> <li>• output data using reserved words: <ul style="list-style-type: none"> <li>– text/data/graphics.</li> </ul> </li> </ul>	
Structured Computer Programming Applications	<ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• examine decision-making processes and conditions when used</li> <li>• apply programming syntax to decision-making processes</li> <li>• code simple decision-making commands involving a variety of conditions</li> <li>• discuss and use nested conditional statements</li> <li>• examine iterative structures and conditions when used</li> <li>• apply programming syntax to iterative processes</li> <li>• code simple repetitive commands involving a variety of conditions, including nested repetitive structures</li> <li>• discuss appropriate use of unconditional branching</li> <li>• identify problem/develop algorithm</li> <li>• design output format</li> <li>• key/code the instructions</li> <li>• test run program</li> </ul>	<p>Decision control (conditional statements). Branching. Looping.</p> <p>Repetition. Iteration. Looping.</p> <p>Counting, specific conditions, incrementing, summation, boolean relational operators</p>

## MODULE INF215: PROGRAMMING II (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Programming Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

## MODULE INF215: PROGRAMMING II (continued)

### Part B: Object-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• identify/describe the problem</li> <li>• list each step required to solve the problem</li> <li>• develop the appropriate logic to achieve the solution</li> <li>• apply structured programming constructs to create a schematic/flowchart pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	
Computer Language Syntax	<ul style="list-style-type: none"> <li>• use constants, variables, data structures, operands</li> <li>• use reserved words, commands, statements, operators, or predefined classes</li> <li>• input data using reserved words or predefined classes</li> <li>• process data</li> <li>• output data using reserved words or predefined classes</li> </ul>	<p>Embedded/read/enter data.</p> <p>Calculations/ manipulations/decision control/ branching/ looping.</p> <p>Text/data/graphics.</p>
Structured Computer Programming Applications	<ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• examine decision-making processes and conditions when used</li> <li>• apply programming syntax to decision-making processes</li> <li>• code simple decision-making commands involving a variety of conditions</li> <li>• discuss and use nested conditional statements</li> <li>• examine iterative structures and conditions when used</li> </ul>	<p>Decision control (conditional statements). Branching. Looping.</p>

## MODULE INF215: PROGRAMMING II (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Programming Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• apply programming syntax to iterative processes:</li> <li>• code simple repetitive commands involving a variety of conditions, including nested repetitive structures</li> <li>• discuss appropriate use of unconditional branching</li> <li>• identify problem/develop algorithm</li> <li>• design output format</li> <li>• key/code the instructions</li> <li>• test run program</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	<p>Repetition. Iteration. Looping.</p> <p>Counting, specific conditions, incrementing, summation, boolean relational operators.</p>
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

**MODULE INF216: PROGRAMMING III**

**Level:** Intermediate

**Theme:** Programming

Prerequisite: Programming II

**Module Parameters:** Access to appropriate computer equipment and software

Students have an opportunity to increase programming skills by using sub-program structures.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>restructure existing computer programs by: <ul style="list-style-type: none"> <li>using sub-program structures</li> <li>revising and constructing computer programs involving sub-program structures</li> </ul> </li> <li>modify the algorithm to isolate the component operations/processes that were incorporated into the sub-program structure</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>developing programs (using either procedure or object-oriented programming) which demonstrate efficient use of algorithms and language syntax.</li> </ul> <p>Demonstrate the ability to:</p> <ul style="list-style-type: none"> <li>assess components of problems which may be isolated in separate sub-programs</li> <li>distinguish between criteria for selection of appropriate sub-program structures</li> <li>distinguish between local and global variables.</li> <li>revise and construct programs that use local and global variables</li> <li>revise and construct programs that use language-specific sub-program structures based on parameters to be passed</li> <li>revise and construct programs that use language-specific sub-program structures involving one- and two-way parameter passing</li> <li>revise and construct programs using nested sub-programming structures.</li> </ul> <p><i>Assessment Tool</i></p> <p><i>Assessment Checklist: Introductory and Intermediate Programming (INFPRGM1)</i></p> <p><i>Sample Assignment: Programming 3A</i></p> <p><i>Standard</i></p> <p><i>Rating of 2 in the creation and presentation of programs</i></p>	<p>30</p> <p>60</p>



## MODULE INF216: PROGRAMMING III (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>            2 – Workstation Use            3 – File Management            2 – Time Management/Organization            3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing:               <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Algorithms	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>modify an existing algorithm(s)</li> <li>identify/describe the problem</li> <li>list each step required to solve the problem</li> <li>develop the appropriate logic to achieve the solution</li> <li>apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	<p>Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.</p>

## MODULE INF216: PROGRAMMING III (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• use constants, variables, data structures, operands</li> <li>• use reserved words, commands, statements, operators, sub-routines, predefined and user-defined functions</li> <li>• input data using reserved words: <ul style="list-style-type: none"> <li>– embedded/read/enter data</li> </ul> </li> <li>• process data: <ul style="list-style-type: none"> <li>– calculations/manipulations/decision control/branching/looping/sub-routines/functions</li> </ul> </li> <li>• edit/modify existing code</li> <li>• output/link program segments/program using reserved words: <ul style="list-style-type: none"> <li>– text/data/graphics.</li> </ul> </li> </ul>	
Structured Computer Program Applications	<ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• examine pre-coded instructions used as templates: <ul style="list-style-type: none"> <li>– why are they used</li> <li>– when used</li> </ul> </li> <li>• code simple instructions to utilize templates/library routines</li> <li>• recode existing programs treating text/graphics as sub-programs</li> <li>• discuss use of procedures/sub-routines/functions</li> <li>• describe purpose/use of sub-programs/ pre-defined functions</li> <li>• utilize sub-routines/functions in program segments</li> <li>• access/create program segments utilizing complex procedures/functions: <ul style="list-style-type: none"> <li>– use parameters/operators to customize repeating code patterns</li> <li>– one- and two-way parameter passing</li> <li>– nested procedures/functions</li> <li>– scope charts</li> <li>– local/global variables</li> </ul> </li> </ul>	<p>Reduces coding/ debugging Under what conditions?</p> <p>Repeating patterns of code.</p>

## MODULE INF216: PROGRAMMING III (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Program Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• apply sub-routines/functions in a program</li> <li>• develop algorithm</li> <li>• design output format</li> <li>• key/code the instructions</li> <li>• test run program</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

## MODULE INF216: PROGRAMMING III (continued)

### Part B: Object-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• modify an existing algorithm(s)</li> <li>• identify/describe the problem</li> <li>• list each step required to solve the problem</li> <li>• develop the appropriate logic to achieve the solution</li> <li>• apply structured programming constructs to modify/create a schematic/flowchart/ pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.
Computer Language Syntax	<ul style="list-style-type: none"> <li>• use constants, variables, data structures, operands</li> <li>• use reserved words, commands, statements, operators, sub-routines, predefined and user-defined functions</li> <li>• input data using reserved words: <ul style="list-style-type: none"> <li>– embedded/read/enter data</li> </ul> </li> <li>• process data: <ul style="list-style-type: none"> <li>– calculations/manipulations/decision control/branching/looping/sub-routines/ functions</li> </ul> </li> <li>• edit/modify existing code</li> <li>• output/link program segments/program using reserved words: <ul style="list-style-type: none"> <li>– text/data/graphics.</li> </ul> </li> </ul>	
Structured Computer Program Applications	<ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• examine pre-coded instructions used as templates: <ul style="list-style-type: none"> <li>– why are they used</li> <li>– when used</li> </ul> </li> <li>• code simple instructions to utilize templates/ library routines/library classes</li> <li>• recode existing programs treating text/graphics as sub-programs</li> </ul>	<p>Reduces coding/ debugging</p> <p>Under what conditions?</p>

**MODULE INF216: PROGRAMMING III (continued)**

Concept	Specific Learner Expectations	Notes
Structured Computer Program Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• discuss use of procedures/sub-routines/functions</li> <li>• describe purpose/use of sub-programs/pre-defined functions</li> <li>• utilize sub-routines/functions in program segments</li> <li>• access/create program segments utilizing complex procedures/functions: <ul style="list-style-type: none"> <li>– use parameters/operators to customize repeating code patterns</li> <li>– one- and two-way parameter passing</li> <li>– nested procedures/functions</li> <li>– scope charts</li> <li>– local/global variables</li> </ul> </li> <li>• apply sub-routines/functions in a program</li> <li>• develop algorithm</li> <li>• design output format</li> <li>• key/code the instructions</li> <li>• test run program</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	Repeating patterns of code.

## MODULE INF216: PROGRAMMING III (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	







## MODULE INF217: PROGRAMMING IV (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>            2 – Workstation Use            3 – File Management            2 – Time Management/Organization            3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing:               <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

### Part A: Procedure-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>modify an existing algorithm(s)</li> <li>identify/describe the problem</li> <li>list each step required to solve the problem/list the required components of the data structure</li> <li>develop the appropriate logic to achieve the solution</li> <li>apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	<p>Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.</p>

## MODULE INF217: PROGRAMMING IV (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• use constants, variables, data structures, operands</li> <li>• use reserved words, commands, statements, operators, sub-routines, functions</li> <li>• use single and multiple dimensioned arrays, character strings, records and sets</li> <li>• input data using reserved words: <ul style="list-style-type: none"> <li>– embed/read/enter data</li> <li>– create/assign values to derived data types</li> </ul> </li> <li>• process data: <ul style="list-style-type: none"> <li>– calculations/manipulations/decision control/branching/looping/sub-routines/ functions</li> </ul> </li> <li>• edit/modify existing code</li> <li>• output/link programs or segments of programs using reserved words: <ul style="list-style-type: none"> <li>– text/data/graphics.</li> </ul> </li> </ul>	
Structured Computer Programming Applications	<ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• describe purpose/use of derived data types</li> <li>• discuss the need for/advantages of derived data types</li> <li>• utilize derived data types in program segments</li> <li>• access/create program segments utilizing derived data types <ul style="list-style-type: none"> <li>– single/multiple dimensioned arrays</li> <li>– character strings</li> <li>– records/sets</li> </ul> </li> <li>• create program segments that access data stored in derived data types</li> <li>• create program segments that utilize pre-defined functions/procedures to process information stored in derived data types</li> <li>• apply derived types in a program</li> <li>• develop algorithm</li> <li>• design output format</li> <li>• key/code the instructions</li> </ul>	<p>Programmers generally do not develop software in isolation but as part of a team of programmers. It is appropriate to introduce the concept of team design work. A group of students can be given a problem where parts of the problem are coded by different students on the team and then place it together to make a working program</p>

## MODULE INF217: PROGRAMMING IV (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Programming Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• test run program</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

## MODULE INF217: PROGRAMMING IV (continued)

### Part B: Object-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• modify an existing algorithm(s)</li> <li>• identify/describe the problem</li> <li>• list each step required to solve the problem/list the required components of the data structure</li> <li>• develop the appropriate logic/data components to achieve the solution</li> <li>• apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	
Computer Language Syntax	<ul style="list-style-type: none"> <li>• use constants, variables, data structures, operands</li> <li>• use reserved words, commands, statements, operators, sub-routines, functions</li> <li>• use single and multiple dimensioned arrays, character strings, records/sets/structures/pointers/classes</li> <li>• input data using reserved words: <ul style="list-style-type: none"> <li>– embed/read/enter data</li> <li>– create/assign values/operations to derived data types</li> </ul> </li> <li>• process data: <ul style="list-style-type: none"> <li>– calculations/manipulations/decision control/branching/looping</li> <li>– sub-routines/functions/classes/objects</li> </ul> </li> <li>• edit/modify existing code</li> <li>• output/link programs or segments of programs using reserved words or predefined classes: <ul style="list-style-type: none"> <li>– text/data/graphics.</li> </ul> </li> </ul>	
Structured Computer Programming	<ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• describe purpose/use of derived data types</li> <li>• discuss the need for/advantages of derived data types</li> <li>• utilize derived data types in program segments</li> </ul>	



## MODULE INF217: PROGRAMMING IV (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Programming (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• access/create program segments utilizing derived data types <ul style="list-style-type: none"> <li>– single/multiple dimensioned arrays</li> <li>– character strings</li> <li>– records/sets/structures/pointers/classes</li> </ul> </li> <li>• create program segments that access data/members of derived data types</li> <li>• create program segments that utilize pre-defined functions/procedures and user-defined functions/procedures to process information stored in derived data types</li> <li>• apply derived types in a program</li> <li>• develop algorithm/classes</li> <li>• design output format</li> <li>• key/code the instructions</li> <li>• test run program</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

**MODULE INF218: PROGRAMMING V****Level: Intermediate****Theme: Programming****Prerequisite: Programming IV****Module Parameters: Access to appropriate computer equipment and software**

Students have an opportunity to increase programming skills by developing and using recursive, sorting and merging algorithms.

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>• demonstrate evolving computer programming skills by:<ul style="list-style-type: none"><li>– examining/creating different recursive, sorting, searching and merging algorithms</li></ul></li><li>– revising/creating structured programs containing operations on derived data types</li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>• developing programs (using either procedure or object-oriented programming) which demonstrate efficient use of algorithms and language syntax.</li></ul> <p>Demonstrate the ability to:</p> <ul style="list-style-type: none"><li>– examine/create problems requiring sorting, searching and merging algorithms</li><li>– examine/create problems requiring recursive algorithms</li><li>– identify the merits (efficiencies) of different sorting, searching and merging algorithms</li><li>– create and revise programs using standard sort routines (bubble sort, quick sort, insertion sort, selection sort, . . .)</li><li>– create and revise programs to search sorted and unsorted data (linear and binary searches)</li><li>– create and revise programs to merge sorted data</li><li>– create and revise programs to use iterative and recursive routines.</li></ul> <p><i>Assessment Tools</i> <i>Assessment Checklist: Intermediate Programming (INFPRGM2)</i> <i>Sample Assignment: Programming 4A (Procedure-oriented) or 4B (Object-oriented)</i> <i>Standard</i> <i>Rating of 2 in the creation and presentation of programs</i></p>	<p>30</p> <p>60</p>

## MODULE INF218: PROGRAMMING V (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrating appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>            2 – Workstation Use            3 – File Management            2 – Time Management/Organization            3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing:               <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

### Part A: Procedure-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>modify existing/develop new algorithms</li> <li>identify/describe the problem</li> <li>list each step required to solve the problem/list the required components of the data structure</li> <li>develop the appropriate logic/data components required to achieve the solution</li> <li>develop the appropriate methods of accessing data in derived data types</li> </ul>	<p>Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.</p>

## MODULE INF218: PROGRAMMING V (continued)

Concept	Specific Learner Expectations	Notes
Algorithms (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• compare iterative and recursive routines</li> <li>• measure the efficiency of comparable routines</li> <li>• apply structured programming constructs to modify/create a schematic/flowchart/ pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	
Computer Language Syntax	<ul style="list-style-type: none"> <li>• use constants, variables, data structures, operands</li> <li>• use reserved words, commands, statements, operators, sub-routines, functions</li> <li>• use language specific derived data types</li> <li>• input data using reserved words: <ul style="list-style-type: none"> <li>– embed/read/enter data</li> <li>– create/assign values to derived data types</li> </ul> </li> <li>• process data: <ul style="list-style-type: none"> <li>– calculations/manipulations/decision control/ branching/looping/sub-routines/functions</li> </ul> </li> <li>• edit/modify/existing code</li> <li>• output/link program segments/programs using reserved words: <ul style="list-style-type: none"> <li>– text/data/graphics.</li> </ul> </li> </ul>	

## MODULE INF218: PROGRAMMING V (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Programming Applications	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• describe purpose/use of derived data types</li> <li>• discuss the need for/advantages of derived data types</li> <li>• utilize derived data types in program segments</li> <li>• utilize/develop/modify iterative and recursive routines to sort/search/merge members of derived data types</li> <li>• identify situations that lend themselves to specific routines</li> <li>• apply appropriate operations on derived data types in a program</li> <li>• develop algorithm</li> <li>• design output format</li> <li>• key/code the instructions</li> <li>• test run program</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	<p>Programmers generally do not develop software in isolation but as part of a team of programmers. It is appropriate to introduce the concept of team design work. A group of students can be given a problem where parts of the problem are coded by different students on the team and then place it together to make a working program</p>
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

## MODULE INF218: PROGRAMMING V (continued)

### Part B: Object-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• modify existing/develop new algorithms/classes</li><li>• identify/describe the problem</li><li>• list each step required to solve the problem/list the required components of the data structure</li><li>• develop the appropriate logic/data components required to achieve the solution</li><li>• develop the appropriate methods of accessing data/methods in derived data types</li><li>• compare iterative and recursive routines/structures</li><li>• measure the efficiency of comparable routines/structures</li><li>• apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).</li></ul>	
Computer Language Syntax	<ul style="list-style-type: none"><li>• use constants, variables, data structures, operands</li><li>• use reserved words, commands, statements, operators, sub-routines, functions</li><li>• use language-specific derived data types</li><li>• input data using reserved words or predefined classes:<ul style="list-style-type: none"><li>– embed/read/enter data</li><li>– create/assign values/operations to derived data types</li></ul></li><li>• process data:<ul style="list-style-type: none"><li>– calculations/manipulations/decision control/branching/looping/sub-routines/functions/classes/objects/methods</li></ul></li><li>• edit/modify existing code</li><li>• output/link program segments/programs using reserved words or predefined classes:<ul style="list-style-type: none"><li>– test/data/graphics.</li></ul></li></ul>	



MODULE INF218: PROGRAMMING V (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Programming	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• describe purpose/use of derived data types</li> <li>• discuss the need for/advantages of derived data types</li> <li>• utilize derived data types in program segments</li> <li>• utilize/develop program segments that access elements of derived data types using member/non-member functions</li> <li>• utilize/develop program segments that develop new classes from base classes/add new data/methods to base classes/redefine the way in which inherited class member functions operate/inherit characteristics from multiple classes</li> <li>• identify situations that lend themselves to specific routines/structures</li> <li>• apply appropriate operations on derived data types in a program</li> <li>• develop algorithm/classes</li> <li>• design output format</li> <li>• key/code the instructions</li> <li>• test run program</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	

## MODULE INF218: PROGRAMMING V (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	



## MODULE CURRICULUM AND ASSESSMENT STANDARDS:

### SECTION F: ADVANCED LEVEL

The following pages define the curriculum and assessment standards for the advanced level of Information Processing.

Advanced level modules demand a higher level of expertise and help prepare students for entry into the workplace or a related post-secondary program.

Module INF301:	Hardware/Software Analysis .....	F.3
Module INF302:	Local Area Networks .....	F.7
Module INF303:	Keyboarding IV .....	F.13
Module INF304:	Keyboarding V .....	F.17
Module INF305:	Keyboarding VI .....	F.21
Module INF306:	Word Processing III .....	F.25
Module INF307:	Electronic Publishing II .....	F.31
Module INF308:	Information Management Tools .....	F.35
Module INF309:	Word-Processing Applications .....	F.39
Module INF310:	Specialization I .....	F.43
Module INF311:	Specialization II .....	F.47
Module INF312:	Document Production II.....	F.51
Module INF313:	Multimedia Authoring II.....	F.55
Module INF314:	Expert Systems.....	F.59
Module INF315:	Programming Application I .....	F.63
Module INF316:	Programming Application II .....	F.67
Module INF317:	Programming Application III.....	F.71



**MODULE INF301:    HARDWARE/SOFTWARE ANALYSIS****Level:**                **Advanced****Theme:**               **Systems Operations****Prerequisite:**       **Computer Operations****Corequisite:**        **Workstation Operations (recommended)****Module Parameters:**   **Access to two different computer systems, three task-specific software packages, supporting documentation**

This module provides an opportunity for students to analyze, compare and evaluate hardware/software on the basis of user requirements.

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>analyze and compare computer hardware and software systems</li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>an analysis and comparison of two different computer systems (internal components, peripheral devices) <i>Assessment Tool</i> <i>Presentation/Reports: Analysis – Hardware (INF 301–1)</i> <i>Standard</i> <i>Rating of 2 in each applicable task</i></li></ul>	30
	<ul style="list-style-type: none"><li>an analysis and comparison of three task-specific software packages on the basis of:<ul style="list-style-type: none"><li>hardware/operating system requirements</li><li>user friendliness</li><li>training/learning effectiveness</li><li>instructional support</li><li>command/function parameters</li><li>screen/page characteristics</li><li>intended use/audience</li><li>intercompatibility with other software</li></ul><i>Assessment Tool</i> <i>Presentation/Reports: Analysis – Software (INF301–1)</i> <i>Standard</i> <i>Rating of 2 in each applicable task</i></li></ul>	30



# MODULE INF301: HARDWARE/SOFTWARE ANALYSIS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>– prepare and present a report recommending hardware and software configurations</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• a report that responds to an identified need to provide or upgrade a computer system. The report will provide recommendations and rationale for a particular hardware/software components (recommendation and reasons) that addresses: <ul style="list-style-type: none"> <li>– client needs</li> <li>– information base</li> <li>– implementation time lines</li> <li>– financial costs</li> <li>– workstation requirements</li> <li>– inservice training</li> <li>– support services</li> <li>– warranties</li> <li>– legal restrictions.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentation/Reports: Recommending Hardware Software (INF 301-1)</i></p> <p><i>Standard</i>  <i>Rating of 2 in each applicable task</i></p>	30
<ul style="list-style-type: none"> <li>• consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>• demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p>	10
<ul style="list-style-type: none"> <li>• demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>– managing learning</li> <li>– managing resources</li> <li>– communicating effectively</li> <li>– demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	Integrated throughout

**MODULE INF301: HARDWARE/SOFTWARE ANALYSIS** (continued)

Concept	Specific Learner Expectations	Notes
Computer Hardware	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• identify and a report that responds to an identified need to provide or upgrade a computer system. The report will provide recommendations and rationale for a particular hardware/software components (recommendation and reasons) that addresses: <ul style="list-style-type: none"> <li>– client needs</li> <li>– information base</li> <li>– implementation time lines</li> <li>– financial costs</li> <li>– workstation requirements</li> <li>– inservice training</li> <li>– support services</li> <li>– warranties</li> <li>– legal restrictions.</li> </ul> </li> </ul>	
Computer Software	<ul style="list-style-type: none"> <li>• assess and compare system software/firmware: <ul style="list-style-type: none"> <li>– hardware specifications</li> <li>– operating system (icon/command, supervisor, etc.)</li> <li>– utility programs</li> <li>– language translators</li> <li>– compilers</li> <li>– interpreters</li> </ul> </li> <li>• assess and compare application software (data, text, graphics): <ul style="list-style-type: none"> <li>– application package, customized program</li> <li>– instructional/presentation focus</li> <li>– independent/integrated</li> <li>– windows</li> <li>– menus/icons</li> <li>– palettes/toolboxes</li> <li>– help screen</li> </ul> </li> <li>• access support manuals/documentation/ resources: <ul style="list-style-type: none"> <li>– follow instructions and explanations from help menus/software manuals, other resource support.</li> </ul> </li> </ul>	

## MODULE INF301: HARDWARE/SOFTWARE ANALYSIS (continued)

Concept	Specific Learner Expectations	Notes
Analysis Presentation	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• identify computer user needs, time lines</li> <li>• research potential alternatives</li> <li>• identify sources of information</li> <li>• “hands-on” experience to compare/evaluate hardware/software compatibility with identified user needs</li> <li>• make/support recommendation: <ul style="list-style-type: none"> <li>– use appropriate industry-standard format</li> <li>– acceptable content/description</li> <li>– appropriate terminology.</li> </ul> </li> </ul>	<p>Define user purpose/ requirements.</p> <p>Field test:</p> <ul style="list-style-type: none"> <li>– input components</li> <li>– operating system</li> <li>– output components</li> <li>– other peripherals</li> <li>– software package(s).</li> </ul> <p>Presentation could involve:</p> <ul style="list-style-type: none"> <li>– demonstration</li> <li>– illustrated hard copy</li> <li>– multimedia</li> <li>– combination of above.</li> </ul>
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

## MODULE INF302: LOCAL AREA NETWORKS

Level: Advanced

Theme: Systems Operations

Prerequisite: Computer Operations

Pre/Corequisite: Workstation Operations (recommended)

Module Parameters: Access to LAN (hardware, software, support resources)

Students learn about local area network (LAN) computer systems, including hardware and peripheral configurations, interface protocols and data transmission characteristics.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>demonstrate basic LAN competence as:<ul style="list-style-type: none"><li>a user/operator</li></ul></li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>using the LAN – demonstrating ability to<ul style="list-style-type: none"><li>login, logout, use of password (if necessary)</li><li>access information and programs on a LAN.</li><li>download/upload files or data on a LAN.</li><li>organize information on a LAN: (e.g., directories, naming of files etc.)</li></ul></li><li>a report or presentation on how networks works including:<ul style="list-style-type: none"><li>LAN's purpose/capabilities.</li><li>network topologies</li><li>hardware/software configurations for LANs</li></ul></li></ul> <i>Assessment Tool</i> <i>Assessment Guide: Local Area Networks Project</i> <i>– Using the Network and How Networks Work (INF302–1)</i>  <i>Standard</i> <i>Rating of 2 in each applicable task</i>	<div>10</div> <div>20</div>

## MODULE INF302: LOCAL AREA NETWORKS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>– a manager/technician</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• installation and trouble shooting of hardware/software on a network system. <ul style="list-style-type: none"> <li>– install hardware and software</li> <li>– setup users, security rights, and map software</li> <li>– perform trouble shooting activities</li> <li>– design ways to protect the LAN</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Guide: Local Area Networks Project</i>  – Install and Troubleshoot (INF302-1)</p> <p><i>Standard</i>  Rating of 2 in each applicable task</p> <ul style="list-style-type: none"> <li>• prepare a proposal for maintaining a LAN that includes policy and procedures for: <ul style="list-style-type: none"> <li>– network access &amp; security</li> <li>– user access, rights, passwords</li> <li>– file/disk management</li> <li>– software and data upgrades</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Guide: Local Area Networks Project</i>  – Proposal for Maintaining a LAN (INF302-1)</p> <p><i>Standard</i>  Rating of 2 in each applicable task</p>	<p>20</p> <p>40</p>
<ul style="list-style-type: none"> <li>• consistently apply appropriate workstation routines</li> </ul>	<ul style="list-style-type: none"> <li>• demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  Rating of:  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p>	<p>10</p>

## MODULE INF302: LOCAL AREA NETWORKS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
LAN User	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>access LAN facilities and download/upload data/information. <ul style="list-style-type: none"> <li>login, logoff</li> <li>accessing files/programs on all servers/drives</li> <li>organize data on servers &amp; drives</li> <li>demonstrate ability to connect to different printers on the network</li> </ul> </li> </ul>	<p>A network consists of computers and peripheral devices connected via communication lines so that information available on the file server can be accessed quickly and shared with multi-users within the parameters of the local area network system.</p>
How Networks Work	<ul style="list-style-type: none"> <li>identify the LAN purpose/capabilities <ul style="list-style-type: none"> <li>conditions under which a network is established</li> <li>the location of a network configuration</li> </ul> </li> <li>compare network topologies such as <ul style="list-style-type: none"> <li>network protocol</li> <li>advantages of diskless terminals</li> </ul> </li> <li>compare network configuration such as <ul style="list-style-type: none"> <li>evaluation of interface cards (NIC), servers, cables for compatibility with the operating system</li> <li>analyze various configurations: RAM requirements, hard drive, laser/compact disk, different processors, parallel processing, parallel hard drives</li> <li>compare different types of wiring and cabling designs</li> </ul> </li> </ul>	



## MODULE INF302: LOCAL AREA NETWORKS (continued)

Concept	Specific Learner Expectations	Notes
Installing a Network	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• configure/interface hardware               <ul style="list-style-type: none"> <li>– arrange/connect peripheral devices</li> <li>– attach other component (e.g. printers)</li> </ul> </li> <li>• install LAN software:               <ul style="list-style-type: none"> <li>– install/backup/restore files</li> <li>– create/use directories/folders</li> <li>– incorporate file protection</li> </ul> </li> <li>• use defaults, supervisor, housekeeping, diagnostic, viral protection software               <ul style="list-style-type: none"> <li>– setup users, security rights, and manage software.</li> <li>– build in defense on the LAN (e.g. protect against viruses, user abuse or hacking, etc.)</li> </ul> </li> <li>• perform troubleshooting:               <ul style="list-style-type: none"> <li>– diagnoses</li> <li>– remediation</li> </ul> </li> <li>• demonstrate acceptable LAN performance               <ul style="list-style-type: none"> <li>– apply manager's responsibilities                   <ul style="list-style-type: none"> <li>• schedule access</li> <li>• provide assistance</li> <li>• monitor activities</li> <li>• recommend changes</li> <li>• identify issues/trends</li> </ul> </li> </ul> </li> <li>• use support manuals/documentation:               <ul style="list-style-type: none"> <li>– follow hardware/software and educational instructions.</li> </ul> </li> </ul>	<p>Students can be contracted for specific duties and responsibilities (consistent with school/jurisdiction policy and professional/ethical working environment expectations) to work on an existing LAN or have an opportunity to work on a dedicated file server configured specifically to accommodate learning experiences contained in this module.</p> <p>Another option might involve developing community partnerships and have students apprentice on available LAN facilities.</p>
LAN Policy and Procedures	<ul style="list-style-type: none"> <li>• determine network policies:               <ul style="list-style-type: none"> <li>– establish policies for:                   <ul style="list-style-type: none"> <li>• ethical use of software</li> <li>• network access and security</li> <li>• maintaining network data, software integrity</li> <li>• file management and disk management</li> <li>• file backup</li> <li>• job description for the network manager</li> </ul> </li> </ul> </li> </ul>	

## MODULE INF302: LOCAL AREA NETWORKS (continued)

Concept	Specific Learner Expectations	Notes
LAN Policy and Procedures (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>define procedures for file management: <ul style="list-style-type: none"> <li>internal (floppies, files from server, sub-directories, physical drives, logical drives for copy protected and single user programs)</li> <li>public drives</li> <li>DOS drives</li> <li>search drives</li> </ul> </li> <li>define the functions of network shell (copying selected drivers, linking programs, establishing connections for user and server, assigning user rights and names [password]).</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>good health and safety (posture, positioning of hardware and furniture)</li> <li>security for hardware, software, supplies and personal work</li> </ul> </li> <li>demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>start-up procedures</li> <li>organization of work area</li> <li>closing procedures</li> </ul> </li> <li>apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>plan activities</li> <li>organize data, information, resources</li> <li>consider alternatives</li> <li>evaluate activities/results</li> </ul> </li> <li>use related terminology to describe basic processes, procedures and tools.</li> </ul>	



## MODULE INF303: KEYBOARDING IV

**Level:** Advanced

**Theme:** Text/Data Input

**Prerequisite:** Keyboarding III

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module develops the students' keyboarding skill of text and data to entry-level occupational expectations.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>demonstrate proficient keyboarding competence:<ul style="list-style-type: none"><li>text entry (50 wpm)</li><li>numeric entry (150 kpm)</li><li>technique</li></ul></li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>3 timed-writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding :<ul style="list-style-type: none"><li>on alphabetic keys<ul style="list-style-type: none"><li>three minute duration</li><li>maximum 1 uncorrected error</li><li>SI 1.3 – 1.4</li><li>50 words a minute</li></ul></li><li>on numeric keys:<ul style="list-style-type: none"><li>one minute duration</li><li>maximum 1 uncorrected error</li><li>150 numeric keystrokes a minute on 1 to 5 digit numbers</li></ul></li><li>observations over the last quarter of the learning period, during timings and drill work.</li></ul><i>Assessment Tool</i> <i>Assessment Checklist: Text–Data Entry (INFTDENT)</i> <i>Standard</i> <i>Rating of:</i><ul style="list-style-type: none"><li>3 – Eye Focus</li><li>3 – Keystroking</li><li>3 – Service Keys</li><li>3 – Body Position</li></ul></li></ul>	<ul style="list-style-type: none"><li>50</li><li>10</li><li>30</li></ul>

## MODULE INF303: KEYBOARDING IV (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Text Entry	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate increasingly rapid, accurate touch keystroking on straight and draft (edited) copy of: <ul style="list-style-type: none"> <li>alphanumeric keys</li> <li>all punctuation keys</li> <li>service keys (enter, shift, delete, backspace, tab)</li> </ul> </li> <li>use function and cursor movement key efficiently</li> <li>demonstrate correct keystroking technique: <ul style="list-style-type: none"> <li>enter text using designated fingers</li> <li>maintain home-row anchor position</li> <li>demonstrate correct posture (hands, arms, body)</li> </ul> </li> </ul>	<p>Develop speed and accuracy at the phrase, sentence and short paragraph level using short, repetitive timings (.5 to 1 minute) with straight copy text of varying SI. (1.2–1.6).</p> <p>Draft copy should include basic spacing, spelling, punctuation and spacing errors (no more than 1 error per every 10 words).</p>

## MODULE INF303: KEYBOARDING IV (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• proofread and edit text (screen and hard copy) to ensure text is without error</li> <li>• analyze errors and initiate remediation as appropriate for: <ul style="list-style-type: none"> <li>– spelling, shifting, punctuation and spacing errors</li> <li>– transposed, repeated, omitted letters.</li> </ul> </li> </ul>	
Data Entry	<ul style="list-style-type: none"> <li>• demonstrate rapid, accurate data entry on keyboard number pad: <ul style="list-style-type: none"> <li>– using designated fingers</li> <li>– maintaining anchor position.</li> </ul> </li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	





**MODULE INF304: KEYBOARDING V**

**Level:** Advanced

**Theme:** Text/Data Input

Prerequisite:                      Keyboarding IV

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module increases occupational-level keyboarding competence involving text, data and function/service keys from straight copy and edited material.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate proficient keyboarding competence: <ul style="list-style-type: none"> <li>text entry (60 wpm)</li> <li>numeric entry (180 kpm)</li> <li>technique</li> </ul> </li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>3 timed-writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding : <ul style="list-style-type: none"> <li>on alphabetic keys <ul style="list-style-type: none"> <li>three minute duration</li> <li>maximum 1 uncorrected error</li> <li>SI <math>\geq 1.35</math></li> <li>60 words a minute</li> </ul> </li> <li>on numeric keys: <ul style="list-style-type: none"> <li>one minute duration</li> <li>maximum 1 uncorrected error</li> <li>180 numeric keystrokes a minute on 1 to 6 digit numbers</li> </ul> </li> <li>observations over the last quarters of the learning period, during timings and drill work.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Text–Data Entry (INFTDENT)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Eye Focus  3 – Keystroking  3 – Service Keys  3 – Body Position</p> </li></ul>	<p>50</p> <p>20</p> <p>20</p>

## MODULE INF304: KEYBOARDING V (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Text Entry	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate increasingly rapid, accurate touch keystroking on straight and draft copy (edited) of: <ul style="list-style-type: none"> <li>alphanumeric keys</li> <li>all punctuation keys</li> <li>service keys</li> </ul> </li> <li>use function and cursor movement keys efficiently</li> <li>demonstrate correct keystroking technique: <ul style="list-style-type: none"> <li>enter text using designated fingers</li> <li>maintain home-row anchor position</li> <li>demonstrate correct posture (hands, arms, body)</li> </ul> </li> <li>proofread and edit text (screen and hard copy) to ensure text is without error</li> </ul>	<p>Enter, shift, delete, backspace, tab.</p> <p>Develop speed and accuracy at the phrase, sentence and short paragraph level using short, repetitive timings (.5 to 1 minute) with straight copy text of varying SI. (1.2–1.6).</p> <p>Draft copy should include basic spacing, spelling, punctuation and spacing errors (no more than 1 error per every 10 words).</p>

**MODULE INF304: KEYBOARDING V (continued)**

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	<i>The student should:</i> <ul style="list-style-type: none"><li>• analyze errors and initiate remediation as appropriate for:<ul style="list-style-type: none"><li>– spelling, shifting, punctuation and spacing errors</li><li>– transposed, repeated, omitted letters.</li></ul></li></ul>	
Data Entry	<ul style="list-style-type: none"><li>• demonstrate rapid, accurate data entry on keyboard number pad:<ul style="list-style-type: none"><li>– using designated fingers</li><li>– maintaining anchor position.</li></ul></li></ul>	
Workstation Management	<ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	



### Support resources

the functions from



## MODULE INF305: KEYBOARDING VI (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Text/Data Entry	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>use formatted, straight-copy material as well as unformatted rough-draft material</li> <li>touch-keystroke alphabetic, numeric, punctuation, service keys</li> <li>consistently apply: <ul style="list-style-type: none"> <li>correct finger/key placement</li> <li>healthful body position</li> <li>acceptable eye/copy focus</li> </ul> </li> <li>use numeric keys and/or number pad.</li> </ul>	<p>A few five-minute timed attempts can be used to prepare for workplace expectations if deemed appropriate.</p>

**MODULE INF305: KEYBOARDING VI (continued)**

Concept	Specific Learner Expectations	Notes
Proofreading/Editing	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• proofread/edit screen/documents</li> <li>• analyze errors/determine remediation</li> <li>• use spell check features</li> <li>• errors: spelling, keystroking, punctuation, spacing, transposition, repeated, omitted</li> <li>• use appropriate commands, functions</li> <li>• format/output.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



## MODULE INF306: WORD PROCESSING III

**Level:** Advanced

**Theme:** Productivity Software

**Prerequisites:** Keyboarding II  
Word Processing II

**Corequisite:** Keyboarding III (recommended)

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module provides an opportunity for students to develop occupational-level competence in the use of word-processing software commands and functions to produce mailable reports, correspondence, and tables including the importing and merging of text, data and graphics.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>• demonstrate correct use of software functions by producing a mailable, properly formatted copy of:<ul style="list-style-type: none"><li>– a multi-page report with title pages, table of contents, bibliography appendices, reference lines</li></ul></li></ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"><li>• producing mailable documents, based on formatted and unformatted sources, focusing on advanced functions and improved use of previously learned software functions through business applications including a collection of<ul style="list-style-type: none"><li>– a multi-page report/publication containing:<ul style="list-style-type: none"><li>• macros/templates/autotext for a variety of formats</li><li>• title pages</li><li>• table of contents</li><li>• headings (sub, side and/or paragraph)</li><li>• references/bibliography</li><li>• diagrams using draw features and text boxes</li><li>• desktop publishing features of word processor</li><li>• display paragraphs (e.g. enumerations, charts, graphs)</li><li>• graphics</li><li>• tables</li><li>• merge with spreadsheet/database information</li><li>• appendix</li><li>• index</li></ul></li></ul></li></ul> <p><i>Assessment Tool</i> <i>Assessment Checklist: Word Processing (INFWP)</i> <i>Standard</i> <i>Rating of 3 in the production of mailable documents (no errors in text and well-format)</i></p>	30

# MODULE INF306: WORD PROCESSING III (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>– two-page letters in designated letter style that incorporate special formats</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>– two-page letters requiring at least two of the following functions: <ul style="list-style-type: none"> <li>• letterhead (use of templates or autotext)</li> <li>• use of more detailed macros</li> <li>• inserting table, diagram, spreadsheet or chart</li> <li>• merging names/addresses)</li> <li>• enumeration</li> <li>• graphics.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Word Processing (INFWP)</i></p> <p><i>Standard</i>  <i>Rating of 3 in the production of mailable documents (no errors in text and well-format)</i></p>	25
<ul style="list-style-type: none"> <li>– memos</li> </ul>	<ul style="list-style-type: none"> <li>– memos consisting of <ul style="list-style-type: none"> <li>• macros to format headings.</li> <li>• reference notations</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Word Processing (INFWP)</i></p> <p><i>Standard</i>  <i>Rating of 3 in the production of mailable documents (no errors in text and well-format)</i></p>	10
<ul style="list-style-type: none"> <li>– tables</li> </ul>	<ul style="list-style-type: none"> <li>– multi-column tables containing <ul style="list-style-type: none"> <li>• graphics</li> <li>• merge</li> <li>• graph</li> <li>• sorted</li> <li>• parallel columns</li> <li>• column heads</li> <li>• footnotes</li> <li>• borders</li> <li>• shading</li> <li>• text boxes</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Word Processing (INFWP)</i></p> <p><i>Standard</i>  <i>Rating of 3 in the production of mailable documents (no errors in text and well-format)</i></p>	25

## MODULE INF306: WORD PROCESSING III (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Software Functions and Applications	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>compare at least two word-processing software packages in terms of: <ul style="list-style-type: none"> <li>capabilities</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>demonstrate improved use of previously learned software functions</li> <li>use help functions and references as appropriate.</li> <li>demonstrate use of advanced software functions such as <ul style="list-style-type: none"> <li>use desktop publishing features</li> <li>use draw features (when available)</li> <li>insert graphics (import and design)</li> <li>establish and use libraries, macros</li> </ul> </li> </ul>	<p>Students should incorporate desktop publishing features to improve document readability; e.g.,</p> <ul style="list-style-type: none"> <li>layout/spacing</li> <li>font type, style, size.</li> </ul>



## MODULE INF306: WORD PROCESSING III (continued)

Concept	Specific Learner Expectations	Notes
Software Functions and Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>– design and use more detailed macros</li> <li>– merge and sort text</li> <li>– customizing features (e.g. toolbar and menus)</li> </ul> <ul style="list-style-type: none"> <li>• move through document(s) efficiently by using appropriate cursor movement, tools/commands</li> </ul>	
Document Production	<ul style="list-style-type: none"> <li>• demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>– save files (alternative formats)</li> <li>– print documents</li> </ul> </li> <li>• replicate, convert and append files</li> <li>• print documents (alternative formats)</li> <li>• print templates</li> <li>• demonstrate appropriate key commands to produce the following documents in mailable form: <ul style="list-style-type: none"> <li>– reports <ul style="list-style-type: none"> <li>• headings/subheading</li> <li>• references (footnotes, end notes, bibliography)</li> <li>• headers/footers</li> <li>• title page</li> <li>• table of contents</li> <li>• indexes</li> </ul> </li> <li>– personal and business letters <ul style="list-style-type: none"> <li>• letter parts (date, inside address, salutations, complimentary closing, name/title, references)</li> <li>• letter styles</li> <li>• subject/attention lines</li> <li>• special notations</li> </ul> </li> <li>– tables (single/multi-column) <ul style="list-style-type: none"> <li>• headings</li> <li>• borders/shading</li> <li>• rulers/tabs</li> <li>• sorted.</li> </ul> </li> </ul> </li> </ul>	<p>Use macros as appropriate.</p> <p>Mailable form: document is accurate and correctly formatted.</p> <p>Students should be familiar with various document styles, including:</p> <p>Reports:</p> <ul style="list-style-type: none"> <li>– research reports/papers</li> <li>– manuscripts</li> <li>– articles</li> <li>– brochures</li> <li>– position papers.</li> </ul> <p>Correspondence:</p> <ul style="list-style-type: none"> <li>– full block</li> <li>– semi-block</li> <li>– set customized styles used by businesses in the community.</li> </ul>

**MODULE INF306: WORD PROCESSING III** (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	



**MODULE INF307: ELECTRONIC PUBLISHING II****Level:** Advanced**Theme:** Productivity Software**Prerequisite:** Electronic Publishing I**Module Parameters:** Computer workstation, disk, electronic/desktop publishing software, support resources

Students use the functions and commands of electronic/desktop publishing software as they integrate text composing, editing, typesetting, graphic generation and page layout functions to create customized, professional-quality documents.

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate electronic publishing software competence by               <ul style="list-style-type: none"> <li>– creating a customized document effectively incorporating text and graphics to communicate an idea or activity</li> <li>– applying software make-up tools and commands</li> </ul> </li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• production of accurate, well designed multi-page original publications focusing on advanced software functions and continued use of previously learned software functions and layout principles including               <ul style="list-style-type: none"> <li>– multi-column</li> <li>– text (body and display)</li> <li>– follow copyright laws</li> <li>– layout principles such as optical centre, balance, white space, columns, Z pattern, contrast, rhythm, unity</li> <li>– additional layout principles including colour, proportion, golden section, bleed and trim</li> </ul> </li> <li>• advanced software functions consisting of               <ul style="list-style-type: none"> <li>– style sheet, page masters or templates</li> <li>– graphics and/or artwork (graphic tools, scanning, clipart files)</li> <li>– style palette (captions, headlines, body, text)</li> <li>– story editor</li> <li>– publication enhancements (e.g. pull quotes, sidebars and footnotes, mastheads and banners 2-page spread graphics)</li> <li>– print composite and colour separation</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Electronic Publishing Software Functions (INFEPSF)</i>  <i>Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)</i></p> <p><i>Standard</i>  <i>Rating of 3 in the production of accurate, well-designed publications</i></p>	<p>60</p> <p>30</p>

**MODULE INF307: ELECTRONIC PUBLISHING II (continued)**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Software Functions and Applications	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>review key features of the desktop publishing software package: <ul style="list-style-type: none"> <li>capabilities</li> <li>system requirements</li> <li>platform options</li> <li>command structure</li> </ul> </li> <li>identify data input sources</li> </ul>	<p>Research a variety of desktop publishing applications.</p> <p>Sources of graphics</p> <ul style="list-style-type: none"> <li>clip art</li> <li>art creation</li> <li>mechanical drawing animation.</li> </ul>

**MODULE INF307: ELECTRONIC PUBLISHING II (continued)**

Concept	Specific Learner Expectations	Notes
Software Functions and Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>– open/create files/templates</li> <li>– key, load, import, scan text and graphic files</li> <li>– name files</li> <li>– import ASCII</li> <li>– file conversion</li> <li>– format text/graphics</li> <li>– proofread, edit text, position graphics</li> </ul> </li> <li>• address the factors that affect desktop publishing layout: <ul style="list-style-type: none"> <li>– identify audience, message</li> <li>– determine budget, resource, time constraints</li> </ul> </li> <li>• establish document layout and specifications:</li> <li>• create/import graphics elements: <ul style="list-style-type: none"> <li>– clip art</li> <li>– art creation</li> <li>– mechanical drawing</li> <li>– animation</li> </ul> </li> <li>• merge graphics and text</li> <li>• use story editor: <ul style="list-style-type: none"> <li>– back publications</li> <li>– index entry/format</li> <li>– page/cross reference</li> <li>– character codes</li> </ul> </li> <li>• use graphics: <ul style="list-style-type: none"> <li>– gray scale scans</li> <li>– independent versus inline</li> <li>– image control</li> <li>– lightness/contrast settings</li> <li>– multi-colour</li> <li>– overlays</li> <li>– edits</li> </ul> </li> <li>• develop page format(s) <ul style="list-style-type: none"> <li>– import/export and link data charts to other applications</li> </ul> </li> <li>• plan/create customized desktop templates</li> <li>• move through document(s) efficiently by using appropriate cursor movement tools/commands</li> <li>• create objects using special effects</li> <li>• use help functions and references as appropriate.</li> </ul>	<p>Select various desktop publishing applications that combine text and graphics, and incorporate desktop publishing features:</p> <ul style="list-style-type: none"> <li>– personal documents</li> <li>– class assignments</li> <li>– school stationery, newsletter, newspaper, yearbook</li> <li>– signs, announcements</li> <li>– invitations</li> <li>– advertisements</li> <li>– brochures (single-, folded-page)</li> <li>– reports, manuals, booklets</li> <li>– community activities</li> <li>– customer documents</li> <li>– business applications.</li> </ul> <p>Prepare text, illustrations, graphics.</p> <p>Create camera ready page layouts.</p> <p>Adhere to publishing industry standards.</p>



**MODULE INF307: ELECTRONIC PUBLISHING II (continued)**

Concept	Specific Learner Expectations	Notes
Document Production	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate appropriate key commands to: <ul style="list-style-type: none"> <li>– save files</li> <li>– print documents</li> <li>– printer drivers</li> <li>– bitmapped</li> <li>– postscript/non-postscript</li> </ul> </li> <li>• demonstrate appropriate key commands to produce quality desktop publishing documents.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

**MODULE INF308: INFORMATION MANAGEMENT TOOLS**

**Level:** Advanced

**Theme:** Productivity Software

**Prerequisite:** Database II  
Spreadsheet II (recommended pre/corequisite)

**Module Parameters:** Computer workstation, disk, information management system software, support resources

This module is designed to develop students' competence in using a variety of information management system software such as project management, schedules and planners for either personal or workplace applications.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate the ability to use information management software to:               <ul style="list-style-type: none"> <li>– plan projects, including setting goals, time lines and resource needs</li> <li>– monitor projects, including time and resource management</li> <li>– adjust project files as appropriate</li> <li>– prepare project reports</li> </ul> </li> <li>– describe the features of the information management software used</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• an information management project using spreadsheet and database software or project management software to               <ul style="list-style-type: none"> <li>– plan an identified scenario (business or personal)                   <ul style="list-style-type: none"> <li>• how could a person or business benefit from the development of the management tool</li> <li>• identify user's needs and determine how the software can be used to meet needs</li> <li>• assess how information is has and is currently being managed.</li> </ul> </li> </ul> </li> </ul> <p><i>Assessment Tool (to be developed)</i>  <i>Assessment Guide: Information Management Project (INF308–1)</i></p> <p><i>Standard</i>  <i>Rating of 2 in each applicable task</i></p> <ul style="list-style-type: none"> <li>– design the information management tool               <ul style="list-style-type: none"> <li>• input and interface</li> <li>• storage and analysis</li> <li>• output functions</li> </ul> </li> <li>– test and implement the management tool               <ul style="list-style-type: none"> <li>• test out the software</li> <li>• does it meet criteria of the user</li> <li>• make adjustments</li> </ul> </li> <li>– present the information management tool to others               <ul style="list-style-type: none"> <li>• demonstrate and discuss its capabilities</li> </ul> </li> </ul>	<p>20</p> <p>40</p> <p>20</p> <p>10</p>

# MODULE INF308: INFORMATION MANAGEMENT TOOLS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Commands and Functions	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>assess commercial information management software (file processing system/data base management system): <ul style="list-style-type: none"> <li>personalize/customize information categories</li> <li>input appropriate data</li> <li>update/delete/append data/information as required</li> <li>obtain data/information from a variety of identified scenarios</li> <li>output report(s)</li> </ul> </li> <li>make a presentation of package/file(s) including explanation, demonstration, presentation involving the following possibilities: <ul style="list-style-type: none"> <li>oral description</li> </ul> </li> </ul>	

## MODULE INF308: INFORMATION MANAGEMENT TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Commands and Functions (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>– illustrated hard copy</li> <li>– electronic assisted</li> <li>– multimedia</li> <li>• review key features of the information management tools: <ul style="list-style-type: none"> <li>– capabilities/applications</li> <li>– system requirements</li> <li>– platform options</li> <li>– command structures</li> </ul> </li> <li>• use software package commands: <ul style="list-style-type: none"> <li>– open/load/save/print file(s)</li> <li>– design/define/customize parameters</li> </ul> </li> <li>• enter data: <ul style="list-style-type: none"> <li>– input/import data</li> </ul> </li> <li>• edit/modify/update fields/file: <ul style="list-style-type: none"> <li>– apply formulae</li> <li>– use resident functions</li> <li>– calculate/recalculate</li> <li>– sort (alphabetic, numeric)</li> <li>– create presentation graphs.</li> </ul> </li> </ul>	
Document Production/Presentation	<ul style="list-style-type: none"> <li>• integrate/merge data</li> <li>• format text/data/graphics: <ul style="list-style-type: none"> <li>– portrait</li> <li>– landscape</li> <li>– print report(s)/document(s)</li> </ul> </li> <li>• export file(s) in a variety of formats.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> </ul>	

**MODULE INF308: INFORMATION MANAGEMENT TOOLS (continued)**

Concept	Specific Learner Expectations	Notes
Workstation Management (continued)	<i>The student should:</i> <ul style="list-style-type: none"><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	

**MODULE INF309: WORD-PROCESSING APPLICATIONS**

Level: Advanced

**Theme:** Applied Processing

**Pre/corequisite:** Document Production I, Keyboarding III, Word Processing III (or Electronic Publishing I)

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module develops high rates of production as students produce documents using numerous functions/commands to create, revise, format and print a wide range of documents in mailable form.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate workplace standards in word-processing document production</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>a collection of produced documents consisting of               <ul style="list-style-type: none"> <li>preparation of mailable documents under time constraints appropriate for complexity of task based on unformatted sources.</li> <li>a minimum expected keyboarding competency of 40 wpm based on Keyboarding III competency</li> <li>production of documents (enter, format, edit and print) from unedited, unformatted sources that integrate data, text, and graphics. Documents should make use of the following types of software                   <ul style="list-style-type: none"> <li>word processing</li> <li>spreadsheet/database</li> <li>graphics (paint and draw, clipart files)</li> <li>desk-top publishing</li> </ul> </li> </ul> </li> <li>editing of existing documents to produce error-free, well-formatted document</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Document Production I and II and Word Processing Applications (INF DOCPR)</i></p> <p><i>Standard</i>  <i>Rating of 3 in the production of accurate and well-formatted documents</i></p>	<p>70</p> <p>20</p>



## MODULE INF309: WORD-PROCESSING APPLICATIONS (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested. Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Document Production	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>clarify the purpose of the document: <ul style="list-style-type: none"> <li>target audience</li> <li>single/multiple/presentation copy</li> </ul> </li> <li>apply word-processing, database, spreadsheet, paint/draw commands as appropriate to import, merge and link spreadsheet and database documents with word-processing file</li> <li>manipulate word-processing, database, spreadsheet, graphics software to produce mailable documents from drafts: <ul style="list-style-type: none"> <li>edited, unformatted</li> <li>unedited, unformatted</li> <li>edited, formatted</li> </ul> </li> <li>follow instructions to customize/personalize existing text and data files.</li> </ul>	<p>Applications should include object linking/embedding (OLE) of SS and DB into WP</p> <p>Potential sources of documents:</p> <ul style="list-style-type: none"> <li>simulations</li> <li>in-baskets</li> <li>projects.</li> </ul>

## MODULE INF309: WORD-PROCESSING APPLICATIONS (continued)

Concept	Specific Learner Expectations	Notes
Document Editing	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• load, redesign, reformat, or modify existing templates and files containing information from database, spreadsheet, presentation graphics files</li> <li>• revise documents to be aesthetically pleasing and well-formatted.</li> <li>• save and print documents.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



**MODULE INF310: SPECIALIZATION I****Level:** Advanced**Theme:** Applied Processing**Pre/corequisite:** Word Processing II, Keyboarding II**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module provides an opportunity to specialize in document preparation, terminology application, and associated office routine expectations in a specific focus area such as a medical, legal, petroleum, real estate, insurance, travel/tourism, forestry or agricultural environment.

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate basic competence in a specific focus area by: <ul style="list-style-type: none"> <li>using appropriate terminology</li> <li>preparing/producing documents</li> <li>exhibiting professional attributes</li> </ul> </li> <li>consistently apply appropriate workstation routines</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>appropriate use of terminology in the area of specialization</li> <li>collection of documents related to the area of specialization consisting of. <ul style="list-style-type: none"> <li>prioritizing tasks and producing documents using office routines, practices and communication skills related to the area of specialization</li> <li>edit documents</li> </ul> </li> </ul> <p><i>Assessment Tool (to be developed)</i>  <i>Assessment Checklist: Specialization I &amp; II (INFSPEC)</i></p> <p><i>Standard</i>  <i>Rating of 2 in all the preparation of accurate, well-formatted specialized documents</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p>	<p>10</p> <p>60</p> <p>20</p> <p>10</p>

## MODULE INF310: SPECIALIZATION I (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Specialization Focus	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>identify/research focus area: <ul style="list-style-type: none"> <li>work environment</li> <li>stakeholder groups</li> <li>routines and practices</li> <li>internal/external characters/parameters</li> <li>existing community offices</li> <li>specialized documents</li> </ul> </li> <li>determine workplace expectations: <ul style="list-style-type: none"> <li>personnel/duties</li> <li>office layout</li> <li>facilities/equipment</li> <li>resource support.</li> </ul> </li> <li>define and use specialized terminology related to area of specialization</li> </ul>	<p>The ability to efficiently apply specific terminology and documentation knowledge in a recognized professional, industrial or business workplace setting enhances opportunities for entry-level employment.</p> <p>This module could consist of a simulation, off-campus experience, student-initiated project, in-basket exercises, or integrated problem requiring specific document preparation, terminology application and workplace environment activities.</p>
Document Production	<ul style="list-style-type: none"> <li>produce and edit a variety of documents in the area of specialization</li> <li>use sample(s) or templates of specialized documents to design well-formatted documents</li> </ul>	

MODULE INF310: SPECIALIZATION I (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• establish time lines, priorities, required resources</li> <li>• format/revise output document(s) for internal/external use: <ul style="list-style-type: none"> <li>– verify content, format and instructions</li> <li>– check reports, forms, documents for mailability</li> <li>– prepare backup/records.</li> </ul> </li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	





**MODULE INF311: SPECIALIZATION II**

Level: Advanced

**Theme:** Applied Processing

**Pre/corequisite:** Specialization I

**Module Parameters:** Computer workstation, disk, word-processing software, support resources

This module provides an opportunity to develop workplace competence in a specific focus area such as medical, legal, petroleum, real estate, insurance, travel/tourism, forestry, or agricultural environment by creating/completing appropriate documents, employing specialized communication skills and conforming to identified workplace expectations under identified time constraints.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate entry-level workplace competence in a specific focus area by:               <ul style="list-style-type: none"> <li>– using appropriate terminology</li> <li>– preparing documents</li> <li>– exhibiting professional attributes</li> </ul> </li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• appropriate use of terminology in the area of specialization</li> <li>• collection of documents related to the area of specialization consisting of.               <ul style="list-style-type: none"> <li>– preparation of mailable specialized documents under time constraints appropriate for complexity of task based on unformatted sources.</li> <li>– a minimum expected keyboarding competency of 30 wpm based on Keyboarding II competency</li> <li>– prioritizing tasks and producing documents</li> <li>– using office routines, practices and communication skills related to the area of specialization</li> <li>– edit documents</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Specialization I &amp; II (INFSPEC)</i></p> <p><i>Standard</i>  <i>Rating of 3 in the preparation of accurate, well-formatted specialized documents under time constraints</i></p>	<p>10</p> <p>60</p> <p>20</p>

## MODULE INF311: SPECIALIZATION II (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Specialization Focus	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>enhance knowledge of focus area: <ul style="list-style-type: none"> <li>work environment</li> <li>stakeholder groups</li> <li>routines and practices</li> <li>internal/external characteristics/parameters</li> <li>existing community offices</li> <li>specialized documents</li> </ul> </li> <li>focus on workplace expectations: <ul style="list-style-type: none"> <li>personnel/duties</li> <li>office layout</li> <li>facilities/equipment</li> <li>resource support.</li> </ul> </li> <li>improve use of specialized terminology related to area of specialization</li> </ul>	<p>The demonstration of competence in a specific focus-area broadens opportunities for employment in a professional, industrial or business environment.</p>

**MODULE INF311: SPECIALIZATION II** (continued)

Concept	Specific Learner Expectations	Notes
Document Production	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• produce and edit a variety of documents in the area of specialization under time constraints</li> <li>• use sample(s) or templates of specialized documents to design well-formatted documents</li> <li>• establish time lines, priorities, required resources</li> <li>• format/revise output document(s) for internal/external use: <ul style="list-style-type: none"> <li>– verify content, format and instructions</li> <li>– check reports, forms, documents for mailability</li> <li>– prepare backup/records.</li> </ul> </li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



## MODULE INF312: DOCUMENT PRODUCTION II

**Level:** Advanced

**Theme:** Applied Processing

**Pre/corequisite:** Document Production I, Keyboarding II, Word Processing II, Spreadsheet I, Database I

**Module Parameters:** Access to word-processing, spreadsheet, database, graphics software

This module provides an opportunity for students to expand their document production skills to workplace standards. Documents could require the importing and integration of word-processing, spreadsheet, graphics and database files.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>demonstrate competence in producing documents that integrate word-processing, data management systems and graphics files/documents:<ul style="list-style-type: none"><li>unedited copy</li><li>unformatted copy</li></ul></li></ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"><li>a collection of produced documents consisting of<ul style="list-style-type: none"><li>preparation of mailable documents under time constraints appropriate for complexity of task based on unformatted sources.</li><li>a minimum expected keyboarding competency of 30 wpm based on Keyboarding II competency</li><li>production of documents (enter, format, edit and print) from unedited, unformatted sources that integrate data, text, and graphics. Documents should make use of the following types of software<ul style="list-style-type: none"><li>word processing</li><li>spreadsheet</li><li>database</li><li>graphics (paint and draw, clipart files)</li></ul></li></ul></li><li>editing of existing documents to produce error-free, well-formatted document</li></ul> <p><i>Assessment Tools</i> <i>Assessment Checklist: Document Production I and II (INF DOCPR)</i></p> <p><i>Standard</i> <i>Rating of 2 in the production of accurate and well-formatted documents</i></p>	<p>70</p> <p>20</p>



**MODULE INF312: DOCUMENT PRODUCTION II (continued)**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Document Production	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>clarify the purpose of the document: <ul style="list-style-type: none"> <li>target audience</li> <li>single/multiple/presentation copy</li> </ul> </li> <li>apply word-processing, database, spreadsheet, paint/draw commands as appropriate to import, merge and link spreadsheet and database documents with word-processing file</li> <li>manipulate word-processing, database, spreadsheet, graphics software to produce mailable documents from drafts: <ul style="list-style-type: none"> <li>edited and unedited, unformatted</li> <li>edited, formatted</li> </ul> </li> <li>follow instructions to customize/personalize existing text and data files.</li> </ul>	<p>Applications should include object linking/embedding (OLE) of SS and DB into WP</p> <p>Potential sources of documents:</p> <ul style="list-style-type: none"> <li>simulations</li> <li>in-baskets</li> <li>projects.</li> </ul>

**MODULE INF312: DOCUMENT PRODUCTION II (continued)**

Concept	Specific Learner Expectations	Notes
Document Editing	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• load, redesign, reformat, or modify existing templates and files containing information from database, spreadsheet, presentation graphics files.</li> <li>• revise documents to be aesthetically pleasing and well-formatted.</li> <li>• save and print documents.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	



**MODULE INF313: MULTIMEDIA AUTHORIZING II****Level:** Advanced**Theme:** Dynamic Environment**Pre/corequisite:** Multimedia Authoring I**Module Parameters:** Computer workstation, multimedia software, support resources

This module provides an opportunity to learn to use a multimedia file/media authoring software based on digitized input of text, video and audio clips.

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate multimedia authoring software and digitized input competence by: <ul style="list-style-type: none"> <li>capturing text/images video and audio information from external sources and inputting it on a personal computer</li> <li>using captured text/images, video and audio to create a multimedia presentation</li> </ul> </li> <li>consistently apply appropriate workstation routines</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>planning, producing, editing and testing of a multimedia presentation that includes original text, graphics, video, audio and animation with the individual components supporting a common theme <ul style="list-style-type: none"> <li>create and import textual material</li> <li>create and import graphics</li> <li>create and import video clips</li> <li>create and import audio clips</li> <li>create and import animation clips</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Multimedia Software Functions (INFMMSF)</i>  <i>Assessment Checklist: Multimedia Production and Presentation (INFMMDOC)</i></p> <p><i>Standard</i>  <i>Rating of 2</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p>	<p>40</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p>

## MODULE INF313: MULTIMEDIA AUTHORING II (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Multimedia Software Authoring Skill	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate ability to use identified multimedia software in the planning of a presentation which includes creating and importing of <ul style="list-style-type: none"> <li>text</li> <li>graphics</li> <li>video</li> <li>sound</li> <li>animation</li> </ul> </li> <li>import text/images, video and audio information</li> <li>manipulate text/images and audio information as required.</li> </ul>	
Multimedia Authoring Application	<ul style="list-style-type: none"> <li>plan steps in preparing a multimedia presentation</li> <li>prepare a storyboard, outlining the presentations content and special effects for a particular theme</li> <li>make decisions regarding text, sound, graphics, video and animation</li> <li>choose and use appropriate tools, commands and devises</li> <li>apply software commands</li> </ul>	

## MODULE INF313: MULTIMEDIA AUTHORING II (continued)

Concept	Specific Learner Expectations	Notes
Multimedia Authoring Application (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• create a customized multimedia authored file/movie (key, import, digitize text, video, audio clips) using software program(s) and external sources by doing all or some of the following: <ul style="list-style-type: none"> <li>– establish windows/screen parameters and characteristics</li> <li>– determine clip considerations</li> <li>– open/import/digitize source clips <ul style="list-style-type: none"> <li>• still-images</li> <li>• animation</li> <li>• audio clips</li> <li>• window files</li> <li>• special files</li> </ul> </li> <li>– edit windows/screens using: <ul style="list-style-type: none"> <li>• tool kit functions</li> <li>• command options</li> </ul> </li> <li>– edit clips (trim/split/join/align)</li> </ul> </li> <li>• preview segments, tracks, sequence</li> <li>• print/export file; storyboard the window/screen; enhance with visual transitions; apply digital filters; create titles/graphics; superimpose clips</li> <li>• run uncompiled sequence; play compiled movie (videotape recording, edit decision list).</li> </ul>	<p>Multimedia software uses the power of the computer to create presentations that integrate text information, visual images and sound tracks. Sources of input include both software-resident clips as well as externally digitized images from videotape, full-motion video sequences, music segments, computer-generated animation, CD/laser discs and other graphics elements including still images, paintings or photographs.</p>



MODULE INF313: MULTIMEDIA AUTHORIZING II (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	

**MODULE INF314: EXPERT SYSTEMS**

Level: Advanced

**Theme:** Dynamic Environment

**Pre/corequisite:** Computer Operations, Hypermedia Tools or Process Control, Programming I and II, Multimedia Authoring I (recommended)

**Module Parameters:** Computer workstation, software, support resources

Students develop an introductory knowledge of expert systems such as artificial intelligence and virtual reality. They will gain competence by developing/modifying programs that incorporate computer-controlled environments and multimedia interactive activities and applications.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>develop an information portfolio on expert systems and other advanced technologies</li> <li>program an application using one of these systems</li> <li>present the results</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>an artificial intelligence project focusing on expert systems consisting of:               <ul style="list-style-type: none"> <li>research of an expert system, including what it is, its effects on society and a description of how its used</li> <li>use of an appropriate programming language/artificial intelligence software package to                   <ul style="list-style-type: none"> <li>solve a specific problem or</li> <li>modify an existing application</li> </ul> </li> <li>explain/demonstrate expert system principles and application(s)</li> </ul> </li> </ul> <p><i>Assessment Tools</i>  <i>Assessment Guide: Artificial Intelligence Project (INF314-1)</i>  <i>Sample Assignment: Artificial Intelligence (AI)</i>  <i>Sample Project (INFAISAM)</i></p> <p><i>Standard</i>  <i>Rating of 2 in all applicable task</i></p>	<p>35</p> <p>35</p> <p>20</p>

**MODULE INF314: EXPERT SYSTEMS (continued)**

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  <i>3 – Workstation Use</i>  <i>3 – File Management</i>  <i>3 – Time Management/Organization</i>  <i>3 – Professionalism</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Artificial Intelligence/ Virtual Reality Application	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>identify software/application(s): <ul style="list-style-type: none"> <li>simulations, telerobotics, telecollaboration, telepresence systems, architecture, audio/airline industry, medicine, physical fitness and entertainment</li> </ul> </li> <li>plan/create/modify a program and/or activity according to provided instructions</li> <li>collect required support resources.</li> </ul>	

## MODULE INF314: EXPERT SYSTEMS (continued)

Concept	Specific Learner Expectations	Notes
Expert Systems Programming and Software	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• apply expert system software commands/instructions/code: <ul style="list-style-type: none"> <li>– load/create customize/modify expert systems software templates, stacks, files, or simulation application that supports an artificial intelligence and/or virtual reality project or scratch program/modify existing program(s)</li> </ul> </li> <li>• input data: <ul style="list-style-type: none"> <li>– design/define project parameters <ul style="list-style-type: none"> <li>• flowchart sequence</li> </ul> </li> <li>– enter data <ul style="list-style-type: none"> <li>• key, load data</li> </ul> </li> </ul> </li> <li>• create/import/scan graphic elements access/manipulate data/information: <ul style="list-style-type: none"> <li>– create background</li> <li>– edit/modify/update data/information</li> <li>– use resident commands</li> <li>– link file(s)</li> <li>– incorporate text (alphabetic, numeric), graphics, motion, sound</li> <li>– demonstrate artificial intelligence/virtual reality/other high technology capability</li> </ul> </li> <li>• output expert system activities <ul style="list-style-type: none"> <li>– display/print/export <ul style="list-style-type: none"> <li>• artificial intelligence file</li> <li>• virtual reality file.</li> </ul> </li> </ul> </li> </ul>	

**MODULE INF314: EXPERT SYSTEMS (continued)**

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	

## MODULE INF315: PROGRAMMING APPLICATION I

Level: Advanced

Theme: Programming

Pre/corequisite: Programming III

Module Parameters: Computer workstation, programming language software, language code manual, support resources

Students create programs that use external files.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>create an algorithm to solve problems requiring an external data file</li><li>develop programs that create, retrieve, append and modify text/nontext files</li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>distinguishing programming problems requiring the use of external data files</li><li>distinguishing programming problems requiring text versus nontext files</li><li>creating and revising programs that will create, retrieve, append and modify external data files</li><li>creating and revising programs that will sequentially/ randomly access data from external data files.</li></ul> <i>Assessment Tool</i> <i>Assessment Checklist: Advanced Programming Applications (INFPRGM3)</i> <i>Sample Assignment: Programming PA1(INFPSAM3)</i> <i>Standard</i> <i>Rating of 3 in the creation and presentation of programs</i>	30  60
<ul style="list-style-type: none"><li>consistently apply appropriate workstation routines</li></ul>	<ul style="list-style-type: none"><li>demonstrate appropriate workstation routines.</li></ul> <i>Assessment Tool</i> <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i> <i>Standard</i> <i>Rating of:</i> <i>3 – Workstation Use</i> <i>3 – File Management</i> <i>3 – Time Management/Organization</i> <i>3 – Professionalism</i>	10



## MODULE INF315: PROGRAMMING APPLICATION I (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>modify existing/develop new algorithms/classes</li> <li>identify/describe the problem</li> <li>list each step required to solve the problem/list the required components of the data structure</li> <li>develop the appropriate logic/data components required to achieve the solution</li> <li>develop the appropriate methods of creating and accessing data stored in external files</li> <li>compare characteristics and use of text and binary files</li> <li>select appropriate file structure based on problem characteristics</li> <li>apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	<p>Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.</p>
Computer Language Syntax	<ul style="list-style-type: none"> <li>use constants, variables, data structures, operands</li> <li>use reserved words, commands, statements, operators, sub-routines, functions</li> <li>use language specific derived data types</li> </ul>	<p>See notes from programming V</p>

**MODULE INF315: PROGRAMMING APPLICATION I** (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>input data using reserved words or predefined classes: <ul style="list-style-type: none"> <li>embed/read from external files/enter data</li> <li>create/assign values/operations to derived data types</li> <li>open and access contents of text and binary files sequentially/randomly</li> </ul> </li> <li>process data: <ul style="list-style-type: none"> <li>calculations/manipulations/decision control/branching/looping/sub-routines/functions/classes/objects/methods/files</li> </ul> </li> <li>edit/modify existing code</li> <li>output/link program segments/programs using reserved words or predefined classes: <ul style="list-style-type: none"> <li>text/data/graphics</li> <li>create and access text and binary files.</li> </ul> </li> </ul>	
Structure Computer Programming Applications	<ul style="list-style-type: none"> <li>access appropriate computer language resource support</li> <li>describe the purpose/use of text and binary files</li> <li>discuss the need for/advantages of text and binary files</li> <li>utilize/develop program segments that create/open/write to/read from/append to text and binary files</li> <li>utilize/develop program segments that access the contents of external files sequentially and randomly</li> <li>utilize/develop program segments that access multiple files</li> <li>identify situations that lend themselves to specific types of file structures</li> <li>apply appropriate file structures and operations in a program</li> <li>develop algorithms/classes</li> </ul>	

## MODULE INF315: PROGRAMMING APPLICATION I (continued)

Concept	Specific Learner Expectations	Notes
Structure Computer Programming Applications (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• design output format/file structure</li> <li>• key/code the instructions</li> <li>• test run program</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	
Workstation Management	<ul style="list-style-type: none"> <li>• apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> <li>– good health and safety (posture, positioning of hardware and furniture)</li> <li>– security for hardware, software, supplies and personal work</li> </ul> </li> <li>• demonstrate efficient and appropriate use of time and resources in terms of: <ul style="list-style-type: none"> <li>– start-up procedures</li> <li>– organization of work area</li> <li>– closing procedures</li> </ul> </li> <li>• apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> <li>– plan activities</li> <li>– organize data, information, resources</li> <li>– consider alternatives</li> <li>– evaluate activities/results</li> </ul> </li> <li>• use related terminology to describe basic processes, procedures and tools.</li> </ul>	

**MODULE INF316: PROGRAMMING APPLICATION II**

**Level:** Advanced

**Theme:** Programming

Prerequisite: Programming III

**Module Parameters:** Computer workstation, programming language, language code manual, support resources

Students create a program using a second programming language.

## Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• employ existing algorithms to solve programming problems</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>• formulating an algorithm for the solution of the problem</li> <li>• distinguishing generic characteristics of problems and design algorithmic solutions independent of programming language</li> </ul>	20
<ul style="list-style-type: none"> <li>• create programs to solve problems using a second programming language using:               <ul style="list-style-type: none"> <li>– basic input/output</li> <li>– basic mathematical function</li> <li>– looping and branches</li> <li>– sub-programs structure</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• constructing programs that               <ul style="list-style-type: none"> <li>– use predefined language specific variables</li> <li>– assign values to variables within the program and via the keyboard</li> <li>– use language-specific commands to perform iterative and decision control operations (relational and logic)</li> <li>– use language-specific sub-program structures</li> <li>– use language-specific reserved words/structures for generating and formatting output.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Advanced Programming Applications (INFPRGM3)</i>  <i>Sample Assignment: Programming PA1(INFPSAM3)</i></p> <p><i>Standard</i>  <i>Rating of 3 in the creation and presentation of programs</i></p>	70

## MODULE INF316: PROGRAMMING APPLICATION II (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>consistently apply appropriate workstation routines</li> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>demonstrate appropriate workstation routines.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i>  <i>Rating of:</i>  3 – Workstation Use  3 – File Management  3 – Time Management/Organization  3 – Professionalism</p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>modify existing/develop new algorithms/classes</li> <li>identify/describe the problem</li> <li>list each step required to solve the problem/list the required components of the data structure</li> <li>develop the appropriate logic/data components required to achieve the solution</li> <li>identify generic characteristics of programming languages</li> <li>identify steps involved in problem solving independent of programming language</li> <li>apply structured programming constructs to modify/create a schematic/flowchart/ pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	<p>Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks. Various computer languages have been developed over the years to improve computer communication efficiency.</p>

**MODULE INF316: PROGRAMMING APPLICATION II (continued)**

Concept	Specific Learner Expectations	Notes
Computer Language Syntax	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• use constraints, variables, data structures, operands in a second programming language</li> <li>• use reserved words, commands, statements, operators, sub-routines, functions in a second programming language</li> <li>• use second language-specific derived data types</li> <li>• input data using reserved words or predefined classes of a second programming language: <ul style="list-style-type: none"> <li>– embed/read/enter data</li> <li>– create/assign values/operations to derived data types</li> </ul> </li> <li>• process data using second language constructs: <ul style="list-style-type: none"> <li>– calculations/manipulations/decision control/branching/looping/subroutines/functions/classes/objects/methods</li> </ul> </li> <li>• output/link program segments/programs using reserved words or predefined classes of a second programming language: <ul style="list-style-type: none"> <li>– text/data/graphics.</li> </ul> </li> </ul>	See notes from Programming V
Structure Computer Programming Applications	<ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• discuss the parallels/differences between the two programming languages</li> <li>• utilize/develop program segments using second language constructs to enter/manipulate/output data</li> <li>• recode first language programs using second programming language</li> <li>• apply second language constructs in a program</li> <li>• develop algorithms/classes</li> <li>• design output format</li> <li>• key/code the instructions</li> <li>• test run programs</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	



**MODULE INF316: PROGRAMMING APPLICATION II (continued)**

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	

## MODULE INF317: PROGRAMMING APPLICATION III

**Level:** Advanced

**Theme:** Programming

**Pre/corequisite:** Programming III

**Module Parameters:** Computer workstation, programming language, language code manual, support resources

Students enhance a program using a second programming language.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>employ existing/create algorithms to solve programming problems</li></ul>	<i>Assessment of student achievement will be based on:</i> <ul style="list-style-type: none"><li>formulating an algorithm for the solution of the problem</li><li>distinguishing generic characteristics of problems and design algorithmic solutions independent of programming language</li></ul>	20
<ul style="list-style-type: none"><li>create programs to solve problems using a second programming language using:<ul style="list-style-type: none"><li>one- and two-dimension arrays</li><li>character strings</li><li>sort, search and merge operations</li><li>external data files</li></ul></li></ul>	<ul style="list-style-type: none"><li>constructing programs that<ul style="list-style-type: none"><li>use one- and two-dimensional arrays</li><li>perform operations on character strings</li><li>sort, search and merge operations</li><li>create/access external data files</li></ul></li></ul> <p><i>Assessment Tool</i> <i>Assessment Checklist: Advanced Programming Applications (INFPRGM3)</i> <i>Sample Assignment: Programming PA1(INFPSAM3)</i></p> <p><i>Standard</i> <i>Rating of 3 in the creation and presentation of programs</i></p>	70
<ul style="list-style-type: none"><li>consistently apply appropriate workstation routines</li></ul>	<ul style="list-style-type: none"><li>demonstrate appropriate workstation routines.</li></ul> <p><i>Assessment Tool</i> <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i> <i>Rating of:</i> 3 – Workstation Use 3 – File Management 3 – Time Management/Organization 3 – Professionalism</p>	10

## MODULE INF317: PROGRAMMING APPLICATION III (continued)

Module Learner Expectations	Assessment Criteria and Conditions (Draft)	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement will be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning period, emphasizing: <ul style="list-style-type: none"> <li>managing learning</li> <li>managing resources</li> <li>communicating effectively</li> <li>demonstrating responsibility.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above.</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>modify existing/develop new algorithms/classes</li> <li>identify/describe the problem</li> <li>list each step required to solve the problem/list the required components of the data structure</li> <li>develop the appropriate logic/data components required to achieve the solution</li> <li>identify steps involved in problem solving independent of programming language</li> <li>apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).</li> </ul>	<p>Programmers normally follow a general or specific set of guidelines when developing computer programs for a client. However, when creating their own computer programs they are able to work within the parameters of their own creativity.</p>
Computer Language Syntax	<ul style="list-style-type: none"> <li>use constraints, variables, data structures, operands in an appropriate programming language</li> <li>use reserved words, commands, statements, operators, sub-routines, functions in the selected programming language</li> <li>use language specific derived data types</li> </ul>	<p>See notes from Programming V</p>

**MODULE INF317: PROGRAMMING APPLICATION III (continued)**

Concept	Specific Learner Expectations	Notes
Computer Language Syntax (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• input data using reserved words or predefined classes: <ul style="list-style-type: none"> <li>– embed/read/enter data</li> <li>– create/assign values/operations to derived data types</li> </ul> </li> <li>• process data: <ul style="list-style-type: none"> <li>– calculations/manipulations/decision control/branching/looping/sub-routines/functions/classes/objects/methods</li> </ul> </li> <li>• output/link program segments/programs using reserved words or redefined classes: <ul style="list-style-type: none"> <li>– text/data/graphics.</li> </ul> </li> </ul>	
Structure Computer Programming Applications	<ul style="list-style-type: none"> <li>• access appropriate computer language resource support</li> <li>• utilize/develop program segments to enter/manipulate/output data</li> <li>• apply selected language constructs in a program</li> <li>• develop algorithms/classes</li> <li>• design output format</li> <li>• key/code the instructions</li> <li>• test run programs</li> <li>• debug/edit program</li> <li>• execute program</li> <li>• document program</li> <li>• assess activities/results.</li> </ul>	

**MODULE INF317: PROGRAMMING APPLICATION III (continued)**

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none"><li>– good health and safety (posture, positioning of hardware and furniture)</li><li>– security for hardware, software, supplies and personal work</li></ul></li><li>• demonstrate efficient and appropriate use of time and resources in terms of:<ul style="list-style-type: none"><li>– start-up procedures</li><li>– organization of work area</li><li>– closing procedures</li></ul></li><li>• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none"><li>– plan activities</li><li>– organize data, information, resources</li><li>– consider alternatives</li><li>– evaluate activities/results</li></ul></li><li>• use related terminology to describe basic processes, procedures and tools.</li></ul>	

# INFORMATION PROCESSING

## SECTION G: ASSESSMENT TOOLS

(DRAFT)

### TABLE OF CONTENTS

The following pages include background information and strategies for assessing student achievement and the assessment tools that are listed in Sections D, E and F of this Guide.

This section of the Guide to Standards and Implementation has been designed to provide a common base of understanding about the level of competencies students are expected to demonstrate to successfully complete a module. The goal is to establish assessment standards for junior and senior high school students that are fair, credible, and challenging.

These tools will assist teachers throughout the province to more consistently assess student achievement. The purpose of expanding on the assessment standards is to:

- increase confidence among students, parents, business/industry and post-secondary that students can demonstrate the competencies specified in the modules they have completed
- encourage fairness and equity in how students' efforts are judged
- enable learners to focus effort on key learnings
- support teachers and community partners in planning and implementing CTS.

These tools are in draft form and are being validated between now and 1997 during the optional stage of CTS implementation.

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#### Assessment Tools Generic to Information Processing Strand

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## ASSESSING STUDENT ACHIEVEMENT IN CTS

The CTS assessment standards assess two basic forms of competency:

- What a student **can do**?
  - **make** a product (e.g., wood bowl, report, garment)
  - **demonstrate** a process
    - strand-related competencies (e.g., keyboarding, hair cutting, sewing techniques, lab procedures)
    - basic competencies (e.g., resource use, safety procedures, teamwork).
- What a student **knows**?
  - knowledge base needed to demonstrate a competency (link theory and practice).

### CTS Defines *Summative* Assessment Standards

The assessment standards and tools defined for the CTS modules, referenced in Sections D, E and F of this Guide, focus on the final (or summative) assessment of student achievement.

Assessment throughout the learning period (or formative assessment) will continue to assess how students are progressing. Teachers direct and respond to students' efforts to learn—setting and marking tasks and assignments, indicating where improvement is needed, sending out interim reports, congratulating excellence, etc.

Teachers will decide which instructional and assessment strategies to apply during the formative learning period. As formative and summative assessment are closely linked, some teachers may wish to modify the tools included in this section to use during the instructional process. Teachers may also develop their own summative assessment tools as long as the standards are consistent with the minimum expectations outlined by Alberta Education.

## Grading and Reporting Student Achievement

When a student can demonstrate ALL of the exit-level competencies defined for the module (Module Learner Expectations), the teacher will designate the module as “successfully completed.” The teacher will then use accepted grading practices to determine the percentage grade to be given for the module—a mark not less than 50%.

The time frame a teacher allows a student to develop the exit-level competency is a local decision. NOTE: The Senior High School Handbook specifies that students must have access to 25 hours of instruction for each credit. Students may, however, attain the required competencies in less time and may proceed to other modules.

Teachers are encouraged to consult their colleagues to ensure grading practices are as consistent as possible.

High school teachers may wish to refer to “Directions for Reporting Student Achievement in CTS” for information on how to use the CTS course codes to report credits students have earned to Alberta Education. (Copies of this document have been forwarded to superintendents and senior high school principals.)

### Components of Assessment Standards in CTS

The following components are included in each module:

- **module learner expectations** (shaded left column of the module) define the exit-level competencies students are expected to achieve to complete a module. Each MLE defines and describes critical behaviours that can be measured and observed. The student must meet the standard specified for **ALL** MLEs within a module to be successful. (*MLEs will not change until 1997 when minor adjustments may be made to update and clarify wording.*)

- **suggested emphasis** (right column of the module) provides a guideline for the relative significance of each MLE and can be used to organize for instruction. (*In draft until early 1997, revisions to selected modules will be distributed in June 1995 and 1996 with final revisions in June 1997.*)
- **conditions and criteria** (middle column of the module) set the framework for the assessment of student competency, specifying the minimum standard for performance and including a reference to assessment tools, where appropriate. (*In draft until early 1997, revisions to selected modules will be distributed in June 1995 and 1996 with final revisions in June 1997.*)

*Conditions* outline the specifications under which a student's competency can be judged. For example, the conditions could specify whether the assessment should be timed or not, or if the student should be allowed to access to support resources or references.

*Criteria* define the behaviours that a student must demonstrate to meet the designated standard. For example, the criteria could describe the various techniques that must be demonstrated when using a tool, and/or describe the minimum components of a project the student must complete.

*Standard* may be defined by (1) assessment tools, which are referenced in this section (or sometimes in approved learning resources) and/or (2) "illustrative examples" of student work (to be developed and distributed in June 1997).

*Assessment Tools* included in this section of the Guide tend to be of two types:

- tools generic to a strand or to the entire CTS program; e.g., a standard 5-point rating scale is used in all strands. Other generic tools include assessing reports and presentations and lab safety checklists. (*Names of these tools*

*include the strand code (e.g., "INF" for Information Processing) and a code for the type of tool (e.g., "TDENT" for Text-Data Entry).*)

- tools specific to a module; e.g., assessment checklist for assessing a venture plan in Enterprise and Innovation or a checklist for sketching, drawing and modelling in Design Studies. (*Names of these tools include the module code; e.g., "INF101-1" indicating that it is the first module-specific tool used in Information Processing Module 101.*)
- Illustrative Examples: Selected examples of student work in print, audio, video and/or CD-ROM formats are scheduled to be available by June 1997. These examples will supplement the assessment tools and help teachers decide if a student's work is at standard, above standard, or not yet at standard.

## Development and Validation Processes

The "Conditions and Criteria" and "Suggested Emphasis" columns are being validated 1994–97, with extensive input from teachers, professional associations/contacts and post-secondary institutions. The goal is to prepare well-structured assessment standards and related assessment tools that:

- establish an appropriate level of challenge and rigour
- relate directly to the type of learning described in the curriculum standard
- are easy to understand
- are efficient to implement
- can provide a consistent measure of what was expected to be measured.



## **ASSESSING STUDENT ACHIEVEMENT IN INFORMATION PROCESSING**

Much of the assessment in Information Processing consists of gathering information about what a student knows and is able to do and being able to compare those outcomes with the standards identified within the curriculum.

Assessing student performance in Information Processing values process as well as product. The focus is primarily on the student's ability to apply knowledge and skills related to using technology and producing documents and presentations rather than the simple acquisition of knowledge and skills.

### **Assessment Strategies and Tools**

A variety of tools have been provided for your reference and use. In the development of the assessment materials there has been an attempt to keep it as simple as possible while also providing guidance and assistance to the teacher. The tools are intended to help you assess students' work as accurately and consistently as possible by stating standards of performance for elements felt to be important within the curriculum as a whole or in specific modules. They also provide standards for "basic competencies" students should be able to demonstrate while engaged in learning.

The tools that have been developed are intended to be used as summative assessment tools. Depending on the way the classroom is organized, they may be used when the student has indicated he or she is ready for the final assessment or by the entire class at the end of the learning period.

### **Tools Generic to Information Processing**

In order to show the progression and continuity of learnings, most tools in Information Processing are generic to particular software applications or document productions. For example the Assessment Checklist for Word Processing incorporates Word Processing I, II and III modules. The progression from basic to advanced software function and document productions can be viewed collectively. The same design was used

in the Applied Processing theme (e.g. INFCRT, INFDOCPR) to show the increasing importance of efficient productivity in work-related environments and articulation with related post secondary programs. The Reference Chart for Keyboarding and Numberpad Rates (INFKEYNB) is to help create consistency in the assessment of speed and accuracy skill development throughout the six keyboarding modules around the province. The generic Information Processing tool for Workstation Routines and Management (INFWRKSTA) has been incorporated into all modules. It brings into context the basic competencies related to Information Processing.

### **Tools Specific to Information Processing**

The tools that have been developed to assess specific MLEs in a module are labelled with the module number and the tool number (e.g., INF101-2). They are referred to under the conditions and criteria section for each module. The assessment tools outline the criteria for assessment and the minimum task performance rating using a 5-point scale. These standards establish an appropriate level of performance and achievement for one or more module learner expectations.

A number of module specific assessment tools have been developed around the frameworks generic to CTS and the strand. These tools identify basic as well as strand specific skill sets such as:

- Planning and Management
- Information Gathering and Processing
- Presenting/Reporting
- Working Collaboratively

Where appropriate "Illustrated Examples" or "Sample Assignments and Projects" have been developed to help establish realistic expectations and standards of achievement.




## BASIC COMPETENCIES REFERENCE GUIDE










*(This checklist is still being validated)*

The following chart outlines basic competencies which students will endeavor to develop and enhance in each of the CTS strands and modules. Students' basic competencies should be assessed through observations involving the student, teacher(s), peers and others as they complete the requirements for each module. In general, there is a progression of task complexity and student initiative as outlined in the Development Framework\*. As students progress through the Stages 1, 2, 3 and 4 of this reference guide, they build on the competencies gained in earlier stages. Students leaving high school should set themselves a goal of being able to demonstrate Stage 3 performance.

*Suggested strategies for classroom use include:*

- having students rate themselves and each other
- using for a reflective conversation between teacher and student
- highlighting areas of strength
- tracking growth in various CTS strands
- highlighting areas upon which to focus
- including in student's portfolio

Stage 1— The student:	Stage 2— The student:	Stage 3— The student:	Stage 4— The student:
<b>Managing Learning</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> comes to class prepared for learning</li> <li><input type="checkbox"/> follows basic instructions as directed</li> <li><input type="checkbox"/> acquires specialized knowledge, skills and attitudes</li> <li><input type="checkbox"/> identifies criteria for evaluating choices and making decisions</li> <li><input type="checkbox"/> uses a variety of learning strategies</li> </ul>	 <ul style="list-style-type: none"> <li><input type="checkbox"/> follows instructions with limited direction</li> <li><input type="checkbox"/> sets goals and establishes steps to achieve them with direction</li> <li><input type="checkbox"/> applies specialized knowledge, skills and attitudes in practical situations</li> <li><input type="checkbox"/> identifies and applies a range of effective strategies for solving problems and making decisions</li> <li><input type="checkbox"/> explores and uses a variety of learning strategies with limited direction</li> </ul>	 <ul style="list-style-type: none"> <li><input type="checkbox"/> follows detailed instructions on an independent basis</li> <li><input type="checkbox"/> sets clear goals and establish steps to achieve them</li> <li><input type="checkbox"/> transfers and applies specialized knowledge, skills and attitudes in a variety of situations</li> <li><input type="checkbox"/> uses a range of critical thinking skills to evaluate situations, solve problems and make decisions</li> <li><input type="checkbox"/> selects and uses effective learning strategies</li> <li><input type="checkbox"/> cooperates with others in the effective use of learning strategies</li> </ul>	 <ul style="list-style-type: none"> <li><input type="checkbox"/> demonstrates self-direction in learning, goal setting and goal achievement</li> <li><input type="checkbox"/> transfers and applies learning in new situations; demonstrates commitment to life-long learning</li> <li><input type="checkbox"/> thinks critically and acts logically to evaluate situations, solve problems and make decisions</li> <li><input type="checkbox"/> provides leadership in the effective use of learning strategies</li> </ul>
<b>Managing Resources</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> adheres to established timelines; uses time/schedules/planners effectively</li> <li><input type="checkbox"/> uses information (material and human resources) as directed</li> <li><input type="checkbox"/> uses technology (facilities, equipment, supplies) as directed to perform a task or provide a service</li> <li><input type="checkbox"/> maintains, stores, and/or disposes of equipment and materials as directed</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> creates and adheres to timelines with limited direction; uses time/schedules/planners effectively</li> <li><input type="checkbox"/> accesses and uses a range of relevant information (material and human resources) with limited direction</li> <li><input type="checkbox"/> uses technology (facilities, equipment, supplies) as appropriate to perform a task or provide a service with minimal assistance and supervision</li> <li><input type="checkbox"/> maintains, stores and/or disposes of equipment and materials with limited assistance</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> creates and adheres to detailed timelines on an independent basis; prioritize task; use time/schedules/planners effectively</li> <li><input type="checkbox"/> accesses a range of information (material and human resources) and recognizes when additional resources are required</li> <li><input type="checkbox"/> selects and uses appropriate technology (facilities, equipment, supplies) to perform a task or provide a service on an independent basis</li> <li><input type="checkbox"/> maintains, stores and/or disposes of equipment and materials on an independent basis</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> creates and adheres to detailed timelines; use time/schedules/planners effectively, prioritizing tasks on a consistent basis</li> <li><input type="checkbox"/> uses a wide range of information (material and human resources) in order to support and enhance the basic requirement</li> <li><input type="checkbox"/> recognizes the monetary and intrinsic value of managing technology (facilities, equipment, supplies)</li> <li><input type="checkbox"/> demonstrates effective techniques for managing facilities, equipment and supplies</li> </ul>
<b>Problem Solving and Innovation</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> participates in problem solving as a process</li> <li><input type="checkbox"/> learns a range of problem-solving skills and approaches</li> <li><input type="checkbox"/> practices problem-solving skills by responding appropriately to a clearly defined problem, specified goals and constraints by: <ul style="list-style-type: none"> <li>– generating alternatives</li> <li>– evaluating alternatives</li> <li>– selecting appropriate alternative(s)</li> <li>– taking action</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> identifies the problem and selects an appropriate problem-solving approach responding appropriately to specified goals and constraints</li> <li><input type="checkbox"/> applies problem-solving skills to a directed or a self-directed activity by: <ul style="list-style-type: none"> <li>– generating alternatives</li> <li>– evaluating alternatives</li> <li>– selecting appropriate alternative(s)</li> <li>– taking action</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> thinks critically and acts logically in the context of problem solving</li> <li><input type="checkbox"/> transfers problem-solving skills to real-life situations by generating new possibilities</li> <li><input type="checkbox"/> prepares implementation plans</li> <li><input type="checkbox"/> recognizes risks</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> identifies and resolves problems efficiently and effectively</li> <li><input type="checkbox"/> identifies and suggest new ideas to get the job done creatively by: <ul style="list-style-type: none"> <li>– combining ideas or information new ways</li> <li>– making connections between seemingly unrelated ideas</li> <li>– actively seeking out opportunities</li> </ul> </li> </ul>

Stage 1— <i>The student:</i>	Stage 2— <i>The student:</i>	Stage 3— <i>The student:</i>	Stage 4— <i>The student:</i>
<b>Communicating Effectively</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> uses communication skills: e.g., reading, writing, illustrating, speaking</li> <li><input type="checkbox"/> uses language in appropriate context</li> <li><input type="checkbox"/> listens to understand and learn</li> <li><input type="checkbox"/> demonstrates positive interpersonal skills in selected contexts</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> communicates thoughts, feelings, and ideas to justify or challenges a position using written, oral and visual means</li> <li><input type="checkbox"/> uses technical language appropriately</li> <li><input type="checkbox"/> listens and responds to understand and learn</li> <li><input type="checkbox"/> demonstrates positive interpersonal skills in many contexts</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> prepares and effectively presents accurate, concise, written, visual and/or oral reports providing reasoned argument</li> <li><input type="checkbox"/> encourages, persuades, convinces or otherwise motivates individuals</li> <li><input type="checkbox"/> listens and responds to understand, learn and teach</li> <li><input type="checkbox"/> demonstrates positive interpersonal skills in most contexts</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> negotiates effectively by working towards an agreement that may involve exchanging specific resources or resolving divergent interests</li> <li><input type="checkbox"/> negotiates and works towards a consensus</li> <li><input type="checkbox"/> listens and responds to understand, learn, teach and evaluate</li> <li><input type="checkbox"/> promotes positive interpersonal skills among others</li> </ul>
<b>Working with Others</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> fulfills responsibility in a group project</li> <li><input type="checkbox"/> works collaboratively in structured situations with peer members</li> <li><input type="checkbox"/> acknowledges the opinions and contributions of others in the group</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> cooperates to achieve group results</li> <li><input type="checkbox"/> maintains a balance between speaking, listening and responding in group discussion</li> <li><input type="checkbox"/> respects the feelings and views of others</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> seeks a team approach as appropriate based on group needs and benefits e.g. idea potential, variety of strengths, sharing of work load</li> <li><input type="checkbox"/> works in a team or group: <ul style="list-style-type: none"> <li>– encourages and supports team members</li> <li>– helps others in a positive manner</li> <li>– provides leadership/ followership as required</li> <li>– negotiates and works toward consensus as required</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> leads, where appropriate, mobilizing the group for high performance</li> <li><input type="checkbox"/> understands and works within the context of the group</li> <li><input type="checkbox"/> prepares, validates and implements plans that reveal new possibilities</li> </ul>
<b>Demonstrating Responsibility</b> <p><b>Attendance</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> demonstrates responsibility in attendance, punctuality and task completion</li> </ul> <p><b>Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> follows personal and environmental health and safety procedures</li> <li><input type="checkbox"/> identifies immediate hazards and their impact on self, others and the environment</li> <li><input type="checkbox"/> follows appropriate/emergency response procedures</li> </ul> <p><b>Ethics</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> makes personal judgements about whether certain behaviour/ action is right or wrong</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> recognizes and follows personal and environmental health and safety procedures</li> <li><input type="checkbox"/> identifies immediate and potential hazards and their impact on self, others and the environment</li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> assesses how personal judgements affect other peer members and/or family; e.g., home and school</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> establishes and follows personal and environmental health and safety procedures</li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> assesses the implications of personal/group actions within the broader community; e.g., workplace</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> transfers and applies personal and environmental health and safety procedures to a variety of environments and situations</li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> demonstrates accountability for actions taken to address immediate and potential hazards</li> <li><input type="checkbox"/> analyses the implications of personal/group actions within the global context</li> <li><input type="checkbox"/> states and defends a personal code of ethics as required</li> </ul>
<b>Developmental Framework ★</b> <ul style="list-style-type: none"> <li>• Simple task</li> <li>• Structured environment</li> <li>• Directed learning</li> </ul>	<ul style="list-style-type: none"> <li>• Task with limited variable</li> <li>• Less structured environment</li> <li>• Limited direction</li> </ul>	<ul style="list-style-type: none"> <li>• Task with multiple variables</li> <li>• Flexible environment</li> <li>• Self-directed learning, seeking assistance as required</li> </ul>	<ul style="list-style-type: none"> <li>• Complex task</li> <li>• Open environment</li> <li>• Self-directed/self-motivated</li> </ul>



S C A L E	RUBRIC STATEMENT (included in assessment tool/statements in <i>italics</i> are optional)	IS TASK/ PROJECT COMPLETED?	PROBLEM SOLVING: STUDENT INITIATIVE VS TEACHER DIRECTION/ SUPPORT	USE OF TOOLS, MATERIALS, PROCESSES	STANDARDS OF QUALITY/ PRODUCTIVITY	TEAMWORK LEADERSHIP	SERVICE CLIENT/ CUSTOMER
<b>0</b>	<i>The student:</i> has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.	Has not completed defined outcomes.		Tools, materials and/or processes are used inappropriately.			
<b>1</b>	meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately. <i>Quality and productivity are reasonably consistent. Works cooperatively. Provides a limited range of customer/client services.</i>	Meets defined outcomes.	Follows a guided plan of action.	A limited range of tools, materials and/or processes are used appropriately.	<i>Quality and productivity are reasonably consistent.</i>	<i>Works cooperatively.</i>	<i>Provides a limited range of customer/client services.</i>
<b>2</b>	meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately. <i>Quality and productivity are reasonably consistent. Works cooperatively to achieve team goals. Identifies and provides customer/client services.</i>	Meets defined outcomes.	Plans and solves problems with limited assistance.	Tools, materials and/or processes are selected and used appropriately.	<i>Quality and productivity are reasonably consistent.</i>	<i>Works cooperatively to achieve team goals.</i>	<i>Identifies and provides customer/client services.</i>
<b>3</b>	meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively. <i>Quality and productivity are consistent. Works cooperatively and contributes ideas and suggestions that enhance team effort. Analyzes and provides effective client/customer services.</i>	Meets defined outcomes.	Plans and solves problems in a self- directed manner.	Tools, materials and/or processes are selected and used efficiently and effectively.	<i>Quality and productivity are consistent.</i>	<i>Works cooperatively and contributes ideas and suggestions that enhance team effort.</i>	<i>Analyzes and provides effective client/customer services.</i>
<b>4</b>	exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence. <i>Quality, particularly details and finishes and productivity are consistent and exceed standards. Leads others to contribute team goals. Analyzes and provides effective client/customer services beyond expectations.</i>	Exceeds defined outcomes.	Plans and solves problems effectively and creatively in a self- directed manner.	Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.	<i>Quality, particularly details and finishes and productivity are consistent and exceed standards.</i>	<i>Leads others to contribute team goals.</i>	<i>Analyzes and provides effective client/customer services beyond expectations.</i>

INTRODUCTORY	INTERMEDIATE	ADVANCED
<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• accurately describes an issue on which people disagree</li> <li>• poses an important question regarding the issue</li> <li>• accesses basic in-school/community information sources regarding the issue</li> <li>• uses one or more information-gathering techniques</li> </ul> <p><b>Analyzing Perspectives</b></p> <ul style="list-style-type: none"> <li>• clarifies different points of view regarding the issue; <i>e.g., social, economic, environmental</i></li> <li>• states a position on the issue and logical reasons for adopting that position</li> <li>• states an opposing position on the issue and logical reasons for adopting that position</li> <li>• identifies sources of conflict among different positions</li> <li>• distinguishes between fact and fiction/opinion/theory</li> </ul> <p><b>Collaboration and Teamwork</b></p> <ul style="list-style-type: none"> <li>• shares work appropriately among group members</li> <li>• respects the views of others</li> </ul> <p><b>Evaluating Choices/Making Decisions</b></p> <ul style="list-style-type: none"> <li>• identifies useful alternatives regarding the issue</li> <li>• establishes criteria for assessing each alternative; <i>e.g., social, economic, environmental</i></li> <li>• selects an appropriate alternative based on established criteria</li> <li>• reflects on strengths/weaknesses of decisions by considering consequences</li> <li>• communicates information in a logical sequence to justify choices/decisions made</li> </ul>	<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• accurately describes an issue on which people disagree, explaining areas of disagreement</li> <li>• poses one or more thoughtful questions regarding the issue</li> <li>• accesses a range of relevant in-school/community resources</li> <li>• uses a range of information-gathering techniques</li> </ul> <p><b>Analyzing Perspectives</b></p> <ul style="list-style-type: none"> <li>• categorizes different points of view regarding the issue; <i>e.g., cultural, ethical, economic, environmental, health-related</i></li> <li>• states a position on the issue and logical reasons for adopting that position</li> <li>• states two or more opposing positions on the issue and logical reasons for adopting each position</li> <li>• describes interrelationships among different perspectives/points of view</li> <li>• determines accuracy/currency/reliability of information and ideas</li> </ul> <p><b>Collaboration and Teamwork</b></p> <ul style="list-style-type: none"> <li>• shares work appropriately among group members</li> <li>• respects and considers the views of others</li> <li>• negotiates solutions to problems</li> </ul> <p><b>Evaluating Choices/Making Decisions</b></p> <ul style="list-style-type: none"> <li>• identifies important and appropriate alternatives regarding the issue</li> <li>• establishes knowledge- and value-based criteria for assessing each alternative; <i>e.g., social, economic, environmental</i></li> <li>• selects an appropriate alternative by showing differences among choices</li> <li>• assesses strengths/weaknesses of decisions by considering consequences</li> <li>• communicates ideas in a logical sequence with supporting detail to justify choices/decisions made</li> </ul>	<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• accurately describes an issue on which people disagree, explaining specific causes of disagreement</li> <li>• poses thoughtful questions regarding the issue</li> <li>• accesses a range of relevant information sources and recognizes when additional information is required</li> <li>• demonstrates resourcefulness in collecting data</li> </ul> <p><b>Analyzing Perspectives</b></p> <ul style="list-style-type: none"> <li>• categorizes different points of view regarding the issue; <i>e.g., cultural, ethical, economic, environmental, health-related, scientific, political</i></li> <li>• states a position on the issue and insightful reasons for adopting that position</li> <li>• states three or more opposing positions on the issue and thoughtful reasons for adopting each position</li> <li>• analyzes interrelationships among different perspectives/points of view</li> <li>• recognizes underlying bias/assumptions/values in information and ideas</li> </ul> <p><b>Collaboration and Teamwork</b></p> <ul style="list-style-type: none"> <li>• shares work appropriately among group members</li> <li>• respects and considers the views of others</li> <li>• negotiates with sensitivity solutions to problems</li> </ul> <p><b>Evaluating Choices/Making Decisions</b></p> <ul style="list-style-type: none"> <li>• describes in detail important and appropriate alternatives regarding the issue</li> <li>• establishes knowledge- and value-based criteria for assessing each alternative; <i>e.g., social, economic, environmental</i></li> <li>• selects an appropriate and useful alternative by showing differences among choices</li> <li>• assesses strengths/weaknesses of decisions by considering consequences and implications</li> <li>• communicates thoughts/feelings/ideas clearly to justify choices/decisions made</li> </ul>

INTRODUCTORY	INTERMEDIATE	ADVANCED
<p><i>The student:</i></p> <p><b>Management</b></p> <ul style="list-style-type: none"> <li>• prepares self for task</li> <li>• organizes and works in an orderly manner</li> <li>• carries out instructions accurately</li> <li>• uses time effectively</li> </ul> <p><b>Teamwork</b></p> <ul style="list-style-type: none"> <li>• cooperates with group members</li> <li>• shares work appropriately among group members</li> </ul> <p><b>Use of Equipment and Materials</b></p> <ul style="list-style-type: none"> <li>• selects and uses appropriate equipment/materials</li> <li>• follows safe procedures/techniques</li> <li>• weighs and measures accurately</li> <li>• returns clean equipment/materials to storage areas</li> </ul> <p><b>Investigative Techniques</b></p> <ul style="list-style-type: none"> <li>• gathers and applies information from at least one source</li> <li>• makes predictions that can be tested</li> <li>• sets up and conducts experiments to test a prediction</li> <li>• distinguishes between manipulated/responding variables</li> <li>• obtains results that can be used to determine if some aspect of the prediction is accurate</li> <li>• summarizes important experimental outcomes</li> </ul>	<p><i>The student:</i></p> <p><b>Management</b></p> <ul style="list-style-type: none"> <li>• prepares self for task</li> <li>• organizes and works in an orderly manner</li> <li>• interprets and carries out instructions accurately</li> <li>• plans and uses time effectively</li> <li>• adheres to routine procedures</li> </ul> <p><b>Teamwork</b></p> <ul style="list-style-type: none"> <li>• cooperates with group members</li> <li>• shares work appropriately among group members</li> <li>• negotiates solutions to problems</li> </ul> <p><b>Use of Equipment and Materials</b></p> <ul style="list-style-type: none"> <li>• selects and uses appropriate equipment/materials</li> <li>• models safe procedures/techniques</li> <li>• weighs and measures accurately</li> <li>• practises proper sanitation procedures</li> <li>• minimizes waste of materials</li> <li>• advises of potential hazards and necessary repairs</li> </ul> <p><b>Investigative Techniques</b></p> <ul style="list-style-type: none"> <li>• gathers and applies information from a variety of sources</li> <li>• makes predictions that can be tested</li> <li>• plans, sets up and conducts experiments to test a prediction</li> <li>• identifies and explains manipulated/responding variables</li> <li>• obtains accurate results that confirm/reject the prediction</li> <li>• summarizes and applies experimental outcomes</li> </ul>	<p><i>The student:</i></p> <p><b>Management</b></p> <ul style="list-style-type: none"> <li>• prepares self for task</li> <li>• organizes and works in an orderly manner</li> <li>• interprets and carries out instructions accurately</li> <li>• plans and uses time effectively in a logical sequence</li> <li>• displays leadership in adhering to routine procedures</li> <li>• attempts to solve problems prior to requesting help</li> </ul> <p><b>Teamwork</b></p> <ul style="list-style-type: none"> <li>• cooperates with group members</li> <li>• shares work appropriately among group members</li> <li>• negotiates with sensitivity solutions to problems</li> <li>• displays effective communication skills</li> </ul> <p><b>Use of Equipment and Materials</b></p> <ul style="list-style-type: none"> <li>• selects and uses equipment/materials independently</li> <li>• demonstrates concern for safe procedures/techniques</li> <li>• weighs and measures accurately and efficiently</li> <li>• practises proper sanitation procedures</li> <li>• minimizes waste of materials</li> <li>• anticipates potential hazards and emergency response</li> </ul> <p><b>Investigative Techniques</b></p> <ul style="list-style-type: none"> <li>• uses relevant information to explain observations</li> <li>• makes predictions that can be tested</li> <li>• plans, sets up and conducts experiments to test a prediction</li> <li>• analyzes relationships among manipulated/responding variables</li> <li>• obtains accurate results that confirm/reject prediction and answer related questions</li> <li>• summarizes, applies and evaluates experimental outcomes</li> </ul>



INTRODUCTORY	INTERMEDIATE	ADVANCED
<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• accurately describes an issue on which people disagree</li> <li>• poses an important question regarding the issue</li> <li>• accesses basic in-school/community information sources regarding the issue</li> <li>• uses one or more information-gathering techniques</li> </ul> <p><b>Analyzing Perspectives</b></p> <ul style="list-style-type: none"> <li>• states a position on the issue and logical reasons for adopting that position</li> <li>• explains why the issue is important by presenting examples of possible consequences</li> <li>• clarifies different points of view regarding the issue; <i>e.g., social, economic, environmental</i></li> <li>• distinguishes between fact and fiction/opinion/theory</li> </ul> <p><b>Collaboration and Teamwork</b></p> <ul style="list-style-type: none"> <li>• works with a range of peer members</li> <li>• shares information/opinions/suggestions through group discussion</li> <li>• listens to and respects the views of others</li> </ul> <p><b>Negotiating and Debating</b></p> <ul style="list-style-type: none"> <li>• presents a convincing argument in logical sequence supporting a position adopted on the issue</li> <li>• provides a relevant response to opposing arguments</li> <li>• speaks clearly so the argument can be understood</li> <li>• establishes a shared understanding of key alternatives and consequences relevant to the issue</li> </ul>	<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• accurately describes an issue on which people disagree, explaining areas of disagreement</li> <li>• poses one or more thoughtful questions regarding the issue</li> <li>• accesses a range of relevant in-school/community resources</li> <li>• uses a range of information-gathering techniques</li> </ul> <p><b>Analyzing Perspectives</b></p> <ul style="list-style-type: none"> <li>• states a position on the issue and logical reasons for adopting that position</li> <li>• explains why the issue is important by presenting examples of possible consequences</li> <li>• categorizes different points of view regarding the issue; <i>e.g., cultural, ethical, economic, environmental, health-related</i></li> <li>• determines accuracy/currency/reliability of information and ideas</li> </ul> <p><b>Collaboration and Teamwork</b></p> <ul style="list-style-type: none"> <li>• works with a range of peer members</li> <li>• shares information/opinions/suggestions, maintaining a balance between speaking and listening</li> <li>• listens to and respects the views of others, requesting clarification as necessary from other group members</li> </ul> <p><b>Negotiating and Debating</b></p> <ul style="list-style-type: none"> <li>• presents a convincing argument in logical sequence supporting a position adopted, conveying points in order of importance</li> <li>• provides a relevant and convincing response to opposing arguments</li> <li>• speaks clearly without hesitation so the argument can be understood</li> <li>• negotiates a shared agreement on preferred alternatives relevant to the issue</li> </ul>	<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• accurately describes an issue on which people disagree, explaining specific causes of disagreement</li> <li>• poses thoughtful questions regarding the issue</li> <li>• accesses a range of relevant information sources and recognizes when additional information is required</li> <li>• demonstrates resourcefulness in collecting data</li> </ul> <p><b>Analyzing Perspectives</b></p> <ul style="list-style-type: none"> <li>• states a position on the issue and insightful reasons for adopting that position</li> <li>• explains why the issue is important by presenting examples of possible consequences and implications</li> <li>• categorizes different points of view regarding the issue; <i>e.g., cultural, ethical, economic, environmental, health-related, scientific, political</i></li> <li>• recognizes underlying bias/assumptions/values in information and ideas</li> </ul> <p><b>Collaboration and Teamwork</b></p> <ul style="list-style-type: none"> <li>• works with a wide range of peer members</li> <li>• shares information/opinions/suggestions, maintaining a balance between speaking and listening</li> <li>• listens to and respects the views of others, requesting clarification as necessary from other group members</li> </ul> <p><b>Negotiating and Debating</b></p> <ul style="list-style-type: none"> <li>• presents a convincing argument in logical sequence supporting a position adopted, conveying points in order of importance and backing each with sound evidence</li> <li>• provides a relevant and convincing rebuttal to opposing arguments</li> <li>• speaks clearly without hesitation so the argument can be understood by all listeners</li> <li>• negotiates a shared agreement on preferred alternatives by resolving divergent points of view</li> </ul>

INTRODUCTORY	INTERMEDIATE	ADVANCED
<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• sets goals and follows instructions accurately</li> <li>• responds to directed questions and follows necessary steps to find answers</li> <li>• accesses basic in-school/community information sources</li> <li>• interprets and organizes information into a logical sequence</li> <li>• records information accurately, using correct technical terms</li> <li>• uses time effectively</li> </ul> <p><b>Presentation</b></p> <ul style="list-style-type: none"> <li>• demonstrates effective use of at least one medium of communication: <i>e.g., <u>Written:</u> spelling, punctuation, grammar, basic format</i></li> <li><i>Oral:</i> voice projection, body language</li> <li><i>Audio-Visual:</i> techniques, tools</li> <li>• uses correct grammatical convention and technical terms through proofreading/editing</li> <li>• provides an introduction that describes the purpose of the project</li> <li>• communicates information in a logical sequence</li> <li>• states a conclusion based on a summary of facts</li> <li>• provides a reference list of three or more basic information sources</li> </ul>	<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• sets goals and describes steps to achieve them</li> <li>• uses personal initiative to formulate questions and find answers</li> <li>• accesses a range of relevant in-school/community resources</li> <li>• interprets, organizes and combines information into a logical sequence</li> <li>• records information accurately with appropriate supporting detail and using correct technical terms</li> <li>• plans and uses time effectively</li> <li>• gathers and responds to feedback regarding approach to task and project status</li> </ul> <p><b>Presentation</b></p> <ul style="list-style-type: none"> <li>• demonstrates effective use of at least two communication media: <i>e.g., <u>Written:</u> spelling, punctuation, grammar, format (formal/informal)</i></li> <li><i>Oral:</i> voice projection, body language, appearance</li> <li><i>Audio-Visual:</i> techniques, tools, clarity</li> <li>• maintains acceptable grammatical and technical standards through proofreading and editing</li> <li>• provides an introduction that describes the purpose and scope of the project</li> <li>• communicates ideas into a logical sequence with sufficient supporting detail</li> <li>• states a conclusion by synthesizing the information gathered</li> <li>• provides a reference list that includes five or more relevant information sources</li> </ul>	<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• sets goals and describes steps to achieve them</li> <li>• uses personal initiative to formulate questions and find answers</li> <li>• accesses a range of relevant information sources and recognizes when additional information is required</li> <li>• interprets, organizes and combines information in creative and thoughtful ways</li> <li>• records information accurately, using appropriate technical terms and supporting detail</li> <li>• plans and uses time effectively, prioritizing tasks on a consistent basis</li> <li>• assesses and refines approach to task and project status based on feedback and reflection</li> </ul> <p><b>Presentation</b></p> <ul style="list-style-type: none"> <li>• demonstrates effective use of a variety of communication media: <i>e.g., <u>Written:</u> spelling, punctuation, grammar, format (formal/informal, technical/literary)</i></li> <li><i>Oral:</i> voice projection, body language, appearance, enthusiasm, evidence of prior practice</li> <li><i>Audio-Visual:</i> techniques, tools, clarity, speed and pacing</li> <li>• maintains acceptable grammatical and technical standards through proofreading and editing</li> <li>• provides an introduction that describes the purpose and scope of the project</li> <li>• communicates thoughts/feelings/ideas clearly to justify or challenge a position</li> <li>• states a conclusion by analyzing and synthesizing the information gathered</li> <li>• gives evidence of adequate research through a reference list including seven or more relevant information sources</li> </ul>

INTRODUCTORY	INTERMEDIATE	ADVANCED
<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• sets goals and follows instructions accurately</li> <li>• adheres to established timelines</li> <li>• responds to directed questions and follows necessary steps to find answers</li> <li>• uses time effectively</li> </ul> <p><b>Information Gathering and Processing</b></p> <ul style="list-style-type: none"> <li>• accesses basic in-school/community information sources</li> <li>• uses one or more information-gathering techniques</li> <li>• interprets and organizes information in a logical sequence</li> <li>• records information accurately, using correct technical terms</li> <li>• distinguishes between fact and fiction/opinion/theory</li> <li>• responds to feedback when current approach is not working</li> </ul> <p><b>Collaboration and Teamwork</b></p> <ul style="list-style-type: none"> <li>• cooperates with group members</li> <li>• shares work appropriately among group members</li> </ul> <p><b>Information Sharing</b></p> <ul style="list-style-type: none"> <li>• demonstrates effective use of one or more communication media; <i>e.g., written, oral, audio-visual</i></li> <li>• communicates information in a logical sequence</li> <li>• uses correct grammatical convention and technical terms</li> <li>• cites three or more basic information sources</li> </ul>	<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• sets goals and establishes steps to achieve them</li> <li>• creates and adheres to useful timelines</li> <li>• uses personal initiative to formulate questions and find answers</li> <li>• plans and uses time effectively</li> </ul> <p><b>Information Gathering and Processing</b></p> <ul style="list-style-type: none"> <li>• accesses a range of relevant in-school/community resources</li> <li>• uses a range of information-gathering techniques</li> <li>• interprets, organizes and combines information into a logical sequence</li> <li>• records information accurately with appropriate supporting detail and using correct technical terms</li> <li>• determines accuracy/currency/reliability of information sources</li> <li>• gathers and responds to feedback regarding approach to the task</li> </ul> <p><b>Collaboration and Teamwork</b></p> <ul style="list-style-type: none"> <li>• cooperates with group members</li> <li>• shares work appropriately among group members</li> <li>• negotiates solutions to problems</li> </ul> <p><b>Information Sharing</b></p> <ul style="list-style-type: none"> <li>• demonstrates effective use of two or more communication media; <i>e.g., written, oral, audio-visual</i></li> <li>• communicates ideas in a logical sequence with sufficient supporting detail</li> <li>• maintains acceptable grammatical and technical standards</li> <li>• cites five or more relevant information sources</li> </ul>	<p><i>The student:</i></p> <p><b>Preparation and Planning</b></p> <ul style="list-style-type: none"> <li>• sets clear goals and establishes steps to achieve them</li> <li>• creates and adheres to detailed timelines</li> <li>• uses personal initiative to formulate questions and find answers</li> <li>• plans and uses time effectively, prioritizing tasks on a consistent basis</li> </ul> <p><b>Information Gathering and Processing</b></p> <ul style="list-style-type: none"> <li>• accesses a range of relevant information sources and recognizes when additional information is required</li> <li>• demonstrates resourcefulness in collecting data</li> <li>• interprets, organizes and combines information in creative and thoughtful ways</li> <li>• records information accurately with appropriate supporting detail and using correct technical terms</li> <li>• recognizes underlying bias/assumptions/values in information sources</li> <li>• assesses and refines approach to the task and project status based on feedback and reflection</li> </ul> <p><b>Collaboration and Teamwork</b></p> <ul style="list-style-type: none"> <li>• cooperates with group members</li> <li>• shares work appropriately among group members</li> <li>• negotiates with sensitivity solutions to problems</li> <li>• displays effective communication and leadership skills</li> </ul> <p><b>Information Sharing</b></p> <ul style="list-style-type: none"> <li>• demonstrates effective use of a variety of communication media; <i>e.g., written, oral, audio-visual</i></li> <li>• communicates thoughts/feelings/ideas clearly to justify or challenge a position</li> <li>• maintains acceptable grammatical and technical standards</li> <li>• gives evidence of adequate information gathering by citing seven or more relevant information sources</li> </ul>



STUDENT: \_\_\_\_\_

MODULE: INF \_\_\_\_\_

<b>STANDARD</b> <b>Rating of 2</b>	Students working at <b>standard</b> must demonstrate preparation of mailable documents (no errors in text) and well-formatted, under time constraints appropriate for complexity of task, based on unformatted sources by the end of the learning period. The minimum expected keyboarding competence for time constraint purposes is 30 wpm (Keyboarding II standard). Keyboarding III is recommended as a corequisite to these modules. The <b>at standard</b> level of competency for these intermediate level modules is 2. The scale at the bottom defines the different levels of competencies.
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<i>Correspondence (INF209)</i>	<i>Reports (INF210)</i>	<i>Tables/Forms (INF211)</i>
<b>Formatting of Correspondence:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> designs and creates templates/macros/auto text for a variety of correspondence (e.g. letterhead, closings letter/punctuation styles, form letters, memoranda)</li> <li><input type="checkbox"/> produces letters in a variety of styles from unformatted sources including use of all basic letter parts plus                             <ul style="list-style-type: none"> <li>• mailing and special notations</li> <li>• attention lines/subject lines</li> <li>• displayed information (enumerations, quotes, tables)</li> <li>• enclosure/copy notations</li> <li>• second page headings</li> </ul> </li> <li><input type="checkbox"/> merges form letters with multiple records</li> <li><input type="checkbox"/> produces memoranda from unformatted sources</li> <li><input type="checkbox"/> edits/reformats existing documents</li> <li><input type="checkbox"/> produces and prints sets of labels</li> <li><input type="checkbox"/> produces and prints envelopes according to current Canada Post guidelines, include mailing/special notations and attention lines</li> <li>* in lieu of printing, send documents to teacher through electronic mail as an attachment</li> </ul>	<b>Formatting of Reports:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> designs and creates templates/macros/auto text for a variety of reports (e.g. bound, unbound, multi-column, formal, informal, APA, MLA)</li> <li><input type="checkbox"/> produces reports from unformatted sources including the following features                             <ul style="list-style-type: none"> <li>• title pages</li> <li>• titles/headings/subheading/sideheadings</li> <li>• table of contents</li> <li>• outlines</li> <li>• display paragraphs/quotes</li> <li>• multi-columns</li> <li>• charts and/or tables</li> <li>• headers/footers</li> <li>• page numbering</li> <li>• citations (footnotes, endnotes, within body)</li> <li>• reference lists and/or bibliographies</li> <li>• appendices (i.e. enumerated summary, charts, tables)</li> <li>• index</li> </ul> </li> <li><input type="checkbox"/> edits/reformats existing documents</li> <li>* in lieu of printing, send documents to teacher through electronic mail as an attachment</li> </ul>	<b>Formatting of Tables:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> designs and creates templates/macros/auto text for a variety of multi-column tables</li> <li><input type="checkbox"/> produces tables from unformatted sources including the following features                             <ul style="list-style-type: none"> <li>• headings/subheadings (multi-line)</li> <li>• borders/shading</li> <li>• cell attributes (e.g. fonts, alignments)</li> <li>• math calculations</li> <li>• table sorts</li> <li>• supplemental data (e.g. footnotes)</li> <li>• special options/features (e.g. sort, split/join cells)</li> <li>• decimal alignment</li> <li>• dot leaders</li> </ul> </li> <li><input type="checkbox"/> edits/reformats existing documents</li> <li><input type="checkbox"/> designs and creates templates for a variety of business forms such as                             <ul style="list-style-type: none"> <li>• invoices/credit memos</li> <li>• purchase requisition/orders</li> <li>• statements of account</li> <li>• employee applications</li> <li>• FAX cover sheets</li> </ul> </li> <li><input type="checkbox"/> uses templates to fill out a variety of business forms</li> </ul>
<b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of <ul style="list-style-type: none"> <li><input type="checkbox"/> spell check and/or grammar check</li> <li><input type="checkbox"/> thesaurus</li> <li><input type="checkbox"/> proofreading skills</li> <li><input type="checkbox"/> appropriate document format and aesthetically pleasing</li> </ul>	<b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of <ul style="list-style-type: none"> <li><input type="checkbox"/> spell check and/or grammar check</li> <li><input type="checkbox"/> thesaurus</li> <li><input type="checkbox"/> proofreading skills</li> <li><input type="checkbox"/> appropriate document format and aesthetically pleasing</li> </ul>	<b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of <ul style="list-style-type: none"> <li><input type="checkbox"/> spell check and/or grammar check</li> <li><input type="checkbox"/> thesaurus</li> <li><input type="checkbox"/> proofreading skills</li> <li><input type="checkbox"/> appropriate document format and aesthetically pleasing</li> </ul>

Rating Scale	4 - Demonstrates initiative that exceeds required techniques /skills	3 - Consistently demonstrates all designated techniques /skills, rarely need prompting	2 - Demonstrates all designated techniques/skills, occasionally needs prompting	1 - Demonstrates most designated techniques/skills, frequently needs prompting	0 - Does not demonstrate designated technique/skill
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STUDENT: \_\_\_\_\_

MODULE: INF \_\_\_\_\_

STANDARD	Students working at standard must demonstrate problem solving techniques through the use of software functions noted in the checklists below and in the preparation of well designed and accurate records and reports. The columns to the left of the checklists indicate the minimum competency level for at standard performance for the introductory and intermediate level modules. The scale at the bottom defines the different levels of competencies. Note: the list of software functions indicated by an asterisk (*) may need to be adjusted to reflect software that is available.	
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At Standard	Introductory Level (INF105)	At Standard	Intermediate Level (INF207)
<b>1</b>	<b>Solves Problems with Databases</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> define problem</li> <li><input type="checkbox"/> plan, design and create databases to solve problems and make decisions</li> <li><input type="checkbox"/> present data visually through the creation of reports</li> <li><input type="checkbox"/> analyze data to draw conclusions and make recommendations</li> <li><input type="checkbox"/> cites references where appropriate</li> </ul>	<b>2</b>	<b>Solves Problems with Databases</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> define problem</li> <li><input type="checkbox"/> plan, design and create databases to solve problems and make decisions</li> <li><input type="checkbox"/> present data visually through the creation of reports</li> <li><input type="checkbox"/> analyze data to draw conclusions and make recommendations</li> <li><input type="checkbox"/> cites references where appropriate</li> </ul>
<b>1</b>	<b>Format Functions for Creating Records/Forms:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> create fields and records using form/list view</li> <li><input type="checkbox"/> specify size of fields               <ul style="list-style-type: none"> <li>- labels (text)</li> <li>- numbers, dates, time</li> <li>- formulas</li> </ul> </li> <li><input type="checkbox"/> create calculated field</li> <li><input type="checkbox"/> use tab to move around a record</li> <li><input type="checkbox"/> work with multiple records in different views</li> <li><input type="checkbox"/> align fields: left, right, centre</li> </ul>	<b>2</b>	<b>Format Functions for Creating Records/Forms:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> continue use of all software functions in introductory level plus</li> <li><input type="checkbox"/> view several part of database at same time in list view</li> <li><input type="checkbox"/> insert/move/remove a split</li> <li><input type="checkbox"/> page break in form and list view</li> <li><input type="checkbox"/> protect a database: unlock and lock fields/form design</li> <li><input type="checkbox"/> use template function</li> <li><input type="checkbox"/> merge and or link with 2 or more databases</li> </ul>
<b>1</b>	<b>File/Edit/Proofread/Manipulate Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> move around database (cursors, go to, select, home, end, page up/down, *scroll bar/arrows)</li> <li><input type="checkbox"/> create/update/recall/rename files</li> <li><input type="checkbox"/> locate specific records in a file</li> <li><input type="checkbox"/> modify records: insert/delete/adjust               <ul style="list-style-type: none"> <li>- fields (e.g. name, size)</li> <li>- field entries (text, numbers, dates)</li> <li>- font types/sizes</li> <li>- text styles and field alignments</li> </ul> </li> </ul>	<b>2</b>	<b>File/Edit/Proofread/Manipulate Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> continue use of all software functions from introductory level</li> <li><input type="checkbox"/> insert/delete manual page breaks</li> <li><input type="checkbox"/> change headers/footers/page numbers</li> <li><input type="checkbox"/> search databases to find               <ul style="list-style-type: none"> <li>- selected records that meet several conditions (and/or)</li> <li>- selected records that do not match a specific condition</li> <li>- use mathematical operators/functions to query</li> <li>- use wildcards in a query</li> <li>- use dates in a query</li> </ul> </li> </ul>
<b>1</b>	<b>Format Functions for creating Reports</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> title reports</li> <li><input type="checkbox"/> select fields for a report</li> <li><input type="checkbox"/> calculate statistics in rows, columns, for entire report</li> <li><input type="checkbox"/> sort reports in alphabetic, numeric, and chronological order</li> <li><input type="checkbox"/> search for selected records for a report</li> <li><input type="checkbox"/> modify reports: add/delete/adjust</li> </ul>	<b>2</b>	<b>Format Functions for creating Reports</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> continue use of all software functions at the introductory level</li> <li><input type="checkbox"/> create and use macros</li> <li><input type="checkbox"/> merge databases with other documents</li> </ul>
<b>Rating Scale</b>	<b>4</b> - Demonstrates initiative that exceeds required techniques /skills	<b>3</b> - Consistently demonstrates all designated techniques /skills, rarely need prompting	<b>2</b> - Demonstrates all designated techniques/skills, occasionally needs prompting
	<b>1</b> - Demonstrates most designated techniques/skills, frequently needs prompting	<b>0</b> - Does not demonstrate designated technique/skill	

CSB: 96 06 07

Information Processing /G.15  
(Interim 1994)



STUDENT: \_\_\_\_\_ MODULE: INF \_\_\_\_\_

STANDARD		Students working at <b>standard</b> must demonstrate preparation of mailable documents (no errors in text or format) based on unformatted sources. Advanced level modules require students to demonstrate workplace competencies by working under time constraints appropriate for the level of complexity of task. The column to left of the checklists indicate the minimum competency level for <b>at standard</b> performance for the intermediate and advanced level modules. The scale at the bottom defines the different levels of competencies.			
<i>At Standard</i>	<i>Document Production I (INF212)</i> <u>Integrated Project</u>	<i>At Standard</i>	<i>Document Production II (INF312)</i> <u>Integrated Project</u>	<i>At Standard</i>	<i>Word Processing Applications (INF309)</i> <u>Integrated Project</u>
<b>1</b>	<input type="checkbox"/> <b>Creates documents</b> - produces documents from unedited, unformatted sources that integrate data, text and graphics. Documents should make use of the following types of software <ul style="list-style-type: none"> <li>• word processing</li> <li>• database</li> <li>• spreadsheets including chart graphing</li> <li>• graphics (paint and draw, clipart files)</li> </ul> <input type="checkbox"/> <b>Edits exiting documents</b> - retrieves, merges and edits documents that integrate data, text and graphics	<b>2</b>	<input type="checkbox"/> <b>Manages time</b> - completes production and editing of documents under time constraints appropriate for the complexity of the task (note: expected keyboarding skill at Keyboarding II standard, 30 wpm) <input type="checkbox"/> <b>Creates documents</b> - produces documents from unedited, unformatted sources that integrate and link (OLE) data, text and graphics. Documents should make use of the following types of software <ul style="list-style-type: none"> <li>• word processing</li> <li>• database</li> <li>• spreadsheets including chart graphing</li> <li>• graphics (paint and draw, clipart files)</li> </ul> <input type="checkbox"/> <b>Edits exiting documents</b> - retrieves, merges and edits documents that integrate data, text and graphics.	<b>3</b>	<input type="checkbox"/> <b>Manages time</b> - completes production and editing of documents under time constraints appropriate for the complexity of the task (note: expected keyboarding skill at Keyboarding III standard, 40 wpm) <input type="checkbox"/> <b>Creates documents</b> - produces a series of documents from unedited, unformatted sources that integrate data, text and graphics. Documents should make use of the following types of software <ul style="list-style-type: none"> <li>• desk-top publishing</li> <li>• word processing</li> <li>• database</li> <li>• spreadsheets including chart graphing</li> <li>• graphics</li> </ul> <input type="checkbox"/> <b>Edit exiting documents</b> - retrieves, merges and edits documents that integrate data, text and graphics
<b>1</b>	<input type="checkbox"/> <b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of <ul style="list-style-type: none"> <li>• spell check and/or grammar check</li> <li>• thesaurus</li> <li>• proofreading skills</li> <li>• elements and principles of design</li> <li>• appropriate document formats</li> <li>• ascetically pleasing</li> </ul>	<b>2</b>	<input type="checkbox"/> <b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of <ul style="list-style-type: none"> <li>• spell check and/or grammar check</li> <li>• thesaurus</li> <li>• proofreading skills</li> <li>• elements and principles of design</li> <li>• appropriate document formats</li> <li>• ascetically pleasing</li> </ul>	<b>3</b>	<input type="checkbox"/> <b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of <ul style="list-style-type: none"> <li>• spell check and/or grammar check</li> <li>• thesaurus</li> <li>• proofreading skills</li> <li>• elements and principles of design</li> <li>• appropriate document formats</li> <li>• ascetically pleasing</li> </ul>
<b>Rating Scale</b>	<b>4</b> - Demonstrates initiative that exceeds required techniques /skills	<b>3</b> - Consistently demonstrates all designated techniques /skills, rarely need prompting	<b>2</b> - Demonstrates all designated techniques/skills, occasionally needs prompting	<b>1</b> - Demonstrates most designated techniques/skills, frequently needs prompting	<b>0</b> - Does not demonstrate designated technique/skill

STUDENT: \_\_\_\_\_

MODULE: INF \_\_\_\_\_

STANDARD		Students working at standard must demonstrate preparation of well-designed publications with no errors in text and including all features noted below based on reproductions and original creations. The column to the left of the checklists indicate the <b>at standard</b> level of competencies at the introductory, intermediate and advanced levels. The rating scale at the bottom defines the different levels of competencies.			
At Standard	Introductory Level-GT I	At Standard	Intermediate Level - EP I	At Standard	Advanced Level - EP II
<b>1</b>	<b>Plans Drawings:</b> <input type="checkbox"/> gathers information regarding • audience • message to be conveyed • image to project • length • purpose <input type="checkbox"/> prepares a thumbnail sketch <input type="checkbox"/> makes decisions regarding types of text, graphics and artwork	<b>2</b>	<b>Plans Publications:</b> <input type="checkbox"/> gathers information regarding • audience • message to be conveyed • image to project • length • purpose <input type="checkbox"/> prepares a thumbnail sketch <input type="checkbox"/> makes decisions regarding types of text, graphics and artwork	<b>3</b>	<b>Plans Publications:</b> <input type="checkbox"/> gathers information regarding • audience • message to be conveyed • image to project • length • purpose <input type="checkbox"/> prepares a thumbnail sketch <input type="checkbox"/> makes decisions regarding types of text, graphics and artwork
<b>1</b>	<b>Reproduces a minimum of 3 one page drawings containing:</b> <input type="checkbox"/> basic page layout principles (e.g. optical center, balance, white space) <input type="checkbox"/> text <input type="checkbox"/> basic text enhancements <input type="checkbox"/> graphic images (e.g. paint, draw and import clipart) <input type="checkbox"/> foreground/background <input type="checkbox"/> filled/colour graphic images <input type="checkbox"/> preview and print drawings  <b>Creates a minimum of 3 original one page drawings containing:</b> <input type="checkbox"/> basic page layout principles (e.g. optical center, balance, white space) <input type="checkbox"/> text <input type="checkbox"/> basic text enhancements <input type="checkbox"/> graphic images (e.g. paint, draw and import clipart) <input type="checkbox"/> foreground/background <input type="checkbox"/> filled/colour graphic images <input type="checkbox"/> preview and print drawings	<b>2</b>	<b>Page layout and design of Publications:</b> <input type="checkbox"/> reproduces a minimum of 3 one and two page publications containing • text (display and body) • graphics and/or artwork (use of scanning and clipart files) • basic text and graphic enhancement (e.g. typefaces, styles, kerning, leading, cropping, fills, rotating text and images) • preview, print and if required reproduce publications <input type="checkbox"/> creates a minimum of 3 one and two page original publications containing • text (display and body) • graphics and/or artwork • text and graphic enhancements (i.e. typefaces, styles, kerning, leading, cropping, fills, rotating text and images) • preview and print publications <input type="checkbox"/> follows copyright laws  <input type="checkbox"/> continues to use effective page layout principles from introductory level <input type="checkbox"/> uses additional page layout principals such as • use of columns • the Z pattern • contrast • rhythm • unity	<b>3</b>	<b>Page layout and design of Publications:</b> <input type="checkbox"/> creates a minimum of 3 multi-page original publications containing • style sheets or templates • trim size, bleed • text (display and body) • graphics and artwork (graphic tools, scanning and clipart files) • a variety of advanced publication enhancements such as – pull quotes, sidebars/footnotes – vertical column division lines, – two page spread graphic – mastheads and banners • preview, print and if necessary reproduce publication <input type="checkbox"/> follows copyright laws  <input type="checkbox"/> continues to use effective page layout principles from introductory level <input type="checkbox"/> uses additional page layout principles such as • proportion • colour • golden section
<b>1</b>	<b>Proofreads and edits drawings:</b> <input type="checkbox"/> spelling, grammar, facts, graphics <input type="checkbox"/> hyphenation, punctuation <input type="checkbox"/> page layout and alignment <input type="checkbox"/> consistency	<b>2</b>	<b>Proofreads and edits publications:</b> <input type="checkbox"/> spelling, grammar, facts, graphics <input type="checkbox"/> hyphenation, punctuation <input type="checkbox"/> page layout and alignment <input type="checkbox"/> consistency	<b>3</b>	<b>Proofreads and edits publications:</b> <input type="checkbox"/> spelling, grammar, facts, graphics <input type="checkbox"/> hyphenation, punctuation <input type="checkbox"/> page layout and alignment <input type="checkbox"/> consistency
<b>Rating Scale</b>	<b>4</b> - Demonstrates initiative that exceeds required techniques /skills	<b>3</b> - Consistently demonstrates all designated techniques /skills, rarely need prompting	<b>2</b> - Demonstrates all designated techniques/skills, occasionally needs prompting	<b>1</b> - Demonstrates most designated techniques/skills, frequently needs prompting	<b>0</b> - Does not demonstrate designated technique/skill

CSB: 96 06 07

Information Processing /G.17  
(Interim 1994)

STUDENT: \_\_\_\_\_

MODULE: INF \_\_\_\_\_

Students working at standard must demonstrate appropriate use of the software functions as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for at standard performance for the introductory, intermediate and advanced level modules. The rating scale at the bottom defines the different levels of competencies. Note: the list of software functions indicated by an asterisk [\*] may need to be adjusted to reflect software that is available.

At Standard	Introductory Level - Graphic Tools	At Standard	Intermediate Level - EP I	At Standard	Advanced Level - EP II
1	<b>Format Functions for creating Drawings:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> determines the size of draw area</li> <li><input type="checkbox"/> moves around in a draw area               <ul style="list-style-type: none"> <li>• page up/down</li> <li>• cursor</li> <li>• scroll bars</li> <li>• mouse</li> </ul> </li> <li><input type="checkbox"/> enlarge the draw area</li> <li><input type="checkbox"/> enter text</li> <li><input type="checkbox"/> type styles (e.g. bold, underscore, italics, shadow, outline)</li> <li><input type="checkbox"/> font styles/sizes</li> <li><input type="checkbox"/> scan graphic images</li> <li><input type="checkbox"/> import graphics</li> <li><input type="checkbox"/> help function</li> <li><input type="checkbox"/> preview/print drawing</li> </ul>	2	<b>Format Functions for creating Publications:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> page layout grid: multi-columns, margins</li> <li><input type="checkbox"/> page numbering, headers, footers</li> <li><input type="checkbox"/> enter display and body text within a DTP program</li> <li><input type="checkbox"/> import text</li> <li><input type="checkbox"/> text alignment: left, right, centre, full justified</li> <li><input type="checkbox"/> text wrap</li> <li><input type="checkbox"/> indent/block paragraphs</li> <li><input type="checkbox"/> tabs: left, right, decimal, centre</li> <li><input type="checkbox"/> typestyles: bold, underscore, italics, reverse type</li> <li><input type="checkbox"/> typefaces and font sizes</li> <li><input type="checkbox"/> kerning/leading</li> <li><input type="checkbox"/> rotate text and images</li> <li><input type="checkbox"/> text block (create and manipulate)</li> <li><input type="checkbox"/> preview/print publications (landscape, portrait)</li> <li><input type="checkbox"/> import clipart/scale and crop image</li> <li><input type="checkbox"/> scan/insert images</li> <li><input type="checkbox"/> create captions/dropped or raised capitals</li> </ul>	3	<b>Format Functions for creating Publications:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> continues to use all format functions from intermediate level</li> <li><input type="checkbox"/> create style sheets and/or master pages</li> <li><input type="checkbox"/> create templates</li> <li><input type="checkbox"/> use styles palette (e.g. captions, headlines, body, text)</li> <li><input type="checkbox"/> use story editor</li> <li><input type="checkbox"/> enhance a publication's format using               <ul style="list-style-type: none"> <li>• pull quotes</li> <li>• sidebars and footnotes</li> <li>• vertical column division lines</li> <li>• two-page spread graphic</li> <li>• create mastheads and banners</li> </ul> </li> <li><input type="checkbox"/> print composite and colour separations</li> </ul>
1	<b>Paint and Draw Tools</b> - makes use of <ul style="list-style-type: none"> <li><input type="checkbox"/> application tools (i.e. select, text)</li> <li><input type="checkbox"/> draw tools (i.e. line, box, circle)</li> <li><input type="checkbox"/> paint tools</li> <li><input type="checkbox"/> fill palettes</li> <li><input type="checkbox"/> line palettes</li> </ul>	2	<b>Tools</b> - makes use of <ul style="list-style-type: none"> <li><input type="checkbox"/> line tools (i.e. square and circle tools)</li> <li><input type="checkbox"/> fill shades, patterns and drop shadowing</li> <li><input type="checkbox"/> layering graphic objects</li> <li><input type="checkbox"/> line draw thickness and other attributes</li> <li><input type="checkbox"/> view function</li> </ul>	3	<b>Tools</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> continues to use all tools from intermediate level</li> </ul>
1	<b>Proofread/Edit Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> create/update/open/</li> <li><input type="checkbox"/> rename files</li> <li><input type="checkbox"/> backspace/undo</li> <li><input type="checkbox"/> select/define a cutout</li> <li><input type="checkbox"/> cut, paste, move</li> <li><input type="checkbox"/> cropping</li> <li><input type="checkbox"/> zoom in/out</li> <li><input type="checkbox"/> edit using erasers</li> <li><input type="checkbox"/> edit colours</li> <li><input type="checkbox"/> delete/insert text</li> <li><input type="checkbox"/> resizing</li> <li><input type="checkbox"/> repositioning</li> </ul>	2	<b>Proofread/Edit Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> spell /grammar checks</li> <li><input type="checkbox"/> change typefaces and typestyles</li> <li><input type="checkbox"/> select/insert/delete text and graphics</li> <li><input type="checkbox"/> copy and paste text</li> <li><input type="checkbox"/> edit line draw/graphic shapes (e.g. stretch, change thickness, reposition, copy to another location, delete/erase a line draw)</li> </ul>	3	<b>Proofread/Edit Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> spell /grammar checks</li> <li><input type="checkbox"/> change typefaces and typestyles</li> <li><input type="checkbox"/> select/insert/delete text and graphics</li> <li><input type="checkbox"/> copy and paste text</li> <li><input type="checkbox"/> edit line draw/graphic shapes (e.g. stretch, change thickness, reposition, copy to another location, delete/erase a line draw)</li> </ul>

Rating Scale	4 - Demonstrates initiative that exceeds required techniques /skills	3 - Consistently demonstrates all designated techniques /skills, rarely need prompting	2 - Demonstrates all designated techniques/skills, occasionally needs prompting	1 - Demonstrates most designated techniques/skills, frequently needs prompting	0 - Does not demonstrate designated technique/skill
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# REFERENCE CHART: KEYBOARDING AND NUMBERPAD RATES

INFKEYNB

Module	Keyboarding Rate		Number Pad Rate	
	★WPM	Weighting	★KPM	Weighting
<b>INF102</b> Keyboarding I text - 1 min. *SI ≤ 1.2 numeric - 1 min. 1-3 digits max. 1 error	20	20/30	80-83	6/10
	21-22	22/30	84-87	7/10
	23-24	24/30	88-91	8/10
	25-26	26/30	92-95	9/10
	27	28/30	96-97	10/10
	28	29/30		
	29	30/30		
<b>INF203</b> Keyboarding II text - 2 mins. *SI ≤ 1.25 numeric - 1 min. 1-3 digits max. 1 error	30	32/50	100-103	6/10
	31	34/50	104-107	7/10
	32	36/50	108/111	8/10
	33	38/50	112-115	9/10
	34	40/50	116-118	10/10
	35	42/50		
	36	44/50		
<b>INF204</b> Keyboarding III text - 2 mins. *SI 1.2-1.35 numeric - 1 min. 1-4 digits max. 1 error	37	46/50		
	38	48/50		
	39	50/50		
	40	32/50	120-125	6/10
	41	34/50	126-131	7/10
	42	36/50	132-137	8/10
	43	38/50	138-143	9/10
	44	40/50	144-148	10/10
	45	42/50		
	46	44/50		
	47	46/50		
	48	48/50		
	49	50/50		

\* Note that SI stands for syllabic intensity which identifies the level of difficulty of a timing (i.e. SI 1.2 indicates the timing has words that average 1.2 syllables in length). The lower the SI the easier the timing. Reference to SI is normally listed at the bottom or top of a timing.

★ (WPM)Words per minute

★★(KPM)Keystrokes per minute

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Module	Keyboarding Rate		Number Pad Rate	
	★WPM	Weighting	★KPM	Weighting
<b>INF303</b> Keyboarding IV text - 3 mins. *SI 1.3-1.4 numeric - 1 min. 1-5 digits max. 1 error	50	32/50	150-155	6/10
	51	34/50	156-161	7/10
	52	36/50	162-167	8/10
	53	38/50	168-173	9/10
	54	40/50	174-178	10/10
	55	42/50		
	56	44/50		
<b>INF304</b> Keyboarding V text - 3 mins. *SI ≥ 1.35 numeric - 1 min. 1-6 digits max. 1 error	57	46/50		
	58	48/50		
	59	50/50		
	60	32/50	180-183	12/20
	61	34/50	184-187	14/20
	62	36/50	188-191	16/20
	63	38/50	192-195	18/20
<b>INF305</b> Keyboarding VI text - 3 mins. *SI ≥ 1.35 numeric - 1 min. 1-6 digits max. 1 error	64	40/50	196-198	20/20
	65	42/50		
	66	44/50		
	67	46/50		
	68	48/50		
	69	50/50		
	70	32/50	200-203	12/20
	71	34/50	204-207	14/20
	72	36/50	208-211	16/20
	73	38/50	212-215	18/20
	74	40/50	216-219	20/20
	75	42/50		
	76	44/50		
	77	46/50		
	78	48/50		
	79	50/50		

Information Processing /G.19  
(Interim 1994)



STUDENT: \_\_\_\_\_ MODULE: INF \_\_\_\_\_

STANDARD	Students working <b>at standard</b> must demonstrate preparation of well-designed productions/presentations including all features noted below based on edited and original creations. The column to the left of the checklists indicate the <b>at standard</b> level of competencies at the introductory, intermediate and advanced levels. The rating scale at the bottom defines the different levels of competencies.
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At Standard	Introductory Level - INF107	At Standard	Intermediate Level - INF213	At Standard	Advanced Level - INF313
<b>1</b>	<b>Planning</b> <input type="checkbox"/> prepares a storyboard outlining the presentation <input type="checkbox"/> makes decisions regarding text, sound, graphics and animation <input type="checkbox"/> chooses and uses appropriate tools, commands and devises	<b>2</b>	<b>Planning</b> <input type="checkbox"/> prepares a storyboard that outlines a 1 minute presentation that contains content and special effects <input type="checkbox"/> makes decisions regarding text, sound, graphics video and animation <input type="checkbox"/> chooses and uses appropriate tools, commands and devises	<b>3</b>	<b>Planning</b> <input type="checkbox"/> prepares a storyboard that contains content and special effects <input type="checkbox"/> makes decisions regarding text, sound, graphics video and animation <input type="checkbox"/> chooses and uses appropriate tools, commands and devises
<b>1</b>	<b>Production of Presentation</b> <input type="checkbox"/> collects required resources <input type="checkbox"/> follows storyboard during production process <input type="checkbox"/> produces presentation using appropriate tools	<b>2</b>	<b>Production of Presentation</b> <input type="checkbox"/> produces a 1 minute presentation that contains text, graphics, sound, video, and animation. <input type="checkbox"/> follows accepted principles of layout and design <input type="checkbox"/> imports and modifies text material <input type="checkbox"/> imports and modifies graphics <input type="checkbox"/> imports and modifies video clips <input type="checkbox"/> imports and modifies audio clips <input type="checkbox"/> imports and modifies animation <input type="checkbox"/> follows copyright laws	<b>3</b>	<b>Production of Presentation</b> <input type="checkbox"/> produces an <b>original</b> presentation that contains text, graphic, sound, video, and animation. <input type="checkbox"/> follows accepted principles of layout and design <input type="checkbox"/> imports original text <input type="checkbox"/> imports original graphic <input type="checkbox"/> imports original audio clips <input type="checkbox"/> imports original video clips <input type="checkbox"/> imports original animation <input type="checkbox"/> follows copyright laws
<b>1</b>	<b>Edit and Testing</b> <input type="checkbox"/> checks spelling, facts, graphics <input type="checkbox"/> tests program links to make sure they work appropriately <input type="checkbox"/> edits to enhance technical quality	<b>2</b>	<b>Edit and Testing</b> <input type="checkbox"/> checks spelling, facts, graphics <input type="checkbox"/> tests program links to make sure they work appropriately <input type="checkbox"/> edits to enhance technical quality	<b>3</b>	<b>Edit and Testing</b> <input type="checkbox"/> checks spelling, facts, graphics <input type="checkbox"/> tests program links to make sure they work appropriately <input type="checkbox"/> edits to enhance technical quality

Rating Scale	4 - Demonstrates initiative that exceeds required techniques/skills	3 - Consistently demonstrates all designated techniques/skills, rarely need prompting	2 - Demonstrates all designated techniques/skills, occasionally needs prompting	1 - Demonstrates most designated techniques/skills, frequently needs prompting	0 - Does not demonstrate designated technique/skill
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STUDENT: \_\_\_\_\_ MODULE: INF \_\_\_\_\_

STANDARD Students working at standard must demonstrate appropriate use of the software functions as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for at standard performance for the introductory, intermediate and advanced level modules. The rating scale at the bottom defines the different levels of competencies. Note: the list of software functions indicated by an asterisk (\*) may need to be adjusted to reflect software that is available.

At Standard	Introductory Level- INF107	At Standard	Intermediate Level-INF213	At Standard	Advanced Level - INF313
1	<b>Text :</b> uses appropriate software functions to <input type="checkbox"/> create text <input type="checkbox"/> enhance text (e.g. alignments/fonts/styles)/ <input type="checkbox"/> manipulate and place text (e.g. copy, move, paste)	2	<b>Text:</b> uses appropriate software functions to <input type="checkbox"/> import/create text <input type="checkbox"/> position text <input type="checkbox"/> size text <input type="checkbox"/> use font styles and colour <input type="checkbox"/> use effects (i.e. fading)	3	<b>Text :</b> uses appropriate software functions to <input type="checkbox"/> continue to use the software functions from the intermediate level <input type="checkbox"/> capture/import text from external sources <input type="checkbox"/> save text
1	<b>Graphics:</b> uses appropriate software functions to <input type="checkbox"/> create graphics <input type="checkbox"/> select graphics <input type="checkbox"/> manipulate graphics	2	<b>Graphics:</b> uses appropriate software functions to <input type="checkbox"/> create background <input type="checkbox"/> import/create graphics (use of scanner, clipart, etc.) <input type="checkbox"/> resize <input type="checkbox"/> use colour palettes <input type="checkbox"/> position graphics	3	<b>Graphics:</b> uses appropriate software functions to <input type="checkbox"/> continue to use software functions from the intermediate level <input type="checkbox"/> capture/import graphics from external sources <input type="checkbox"/> save
1	<b>Sound:</b> uses appropriate software functions to <input type="checkbox"/> create sound <input type="checkbox"/> select sounds <input type="checkbox"/> manipulate sounds	2	<b>Sound:</b> uses appropriate software functions to <input type="checkbox"/> import/create sound <input type="checkbox"/> edit sound file <input type="checkbox"/> save sound file	3	<b>Sound:</b> uses appropriate software functions to <input type="checkbox"/> continue to use software functions from the intermediate level <input type="checkbox"/> capture/import sounds from peripheral devices <input type="checkbox"/> save digitally
	<b>Video:</b> uses appropriate software functions to <input type="checkbox"/> insert a pre-made video clip	2	<b>Video:</b> uses appropriate software functions to <input type="checkbox"/> import existing video clip <input type="checkbox"/> view existing video clip <input type="checkbox"/> edit existing video clip <input type="checkbox"/> merge two or more existing video clips <input type="checkbox"/> save edited video clip	3	<b>Video:</b> uses appropriate software functions to <input type="checkbox"/> continue to use software functions from the intermediate level <input type="checkbox"/> capture/import video clips from external sources <input type="checkbox"/> save
1	<b>Animation:</b> uses appropriate software functions to <input type="checkbox"/> create a frame, object or cell based presentation	2	<b>Animation:</b> uses appropriate software functions to <input type="checkbox"/> import existing animation clip <input type="checkbox"/> view an existing animated clip <input type="checkbox"/> edit an existing animated clip <input type="checkbox"/> create an animated clip	3	<b>Animation:</b> uses appropriate software functions to <input type="checkbox"/> continue to use software functions from the intermediate level <input type="checkbox"/> create/import animations from external sources <input type="checkbox"/> save

Rating Scale	4 - Demonstrates initiative that exceeds required techniques /skills	3 - Consistently demonstrates all designated techniques /skills, rarely need prompting	2 - Demonstrates all designated techniques/skills, occasionally needs prompting	1 - Demonstrates most designated techniques/skills, frequently needs prompting	0 - Does not demonstrate designated technique/skill
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# ASSESSMENT CHECKLIST: INTRODUCTORY AND INTERMEDIATE PROGRAMMING

INFRGM1

STUDENT: \_\_\_\_\_

MODULE: INF \_\_\_\_\_

STANDARD		Students working at standard must demonstrate use of problem solving techniques when producing a program using criteria as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for at standard performance for the introductory and intermediate level modules. The rating scale at the bottom defines the different levels of competencies.			
At Standard	Introductory Level	At Standard	Intermediate Level		
1	<b>Problem Solving Phase:</b> <input type="checkbox"/> defines the nature of the problem and outlines what the program must do. <input type="checkbox"/> creates a simple algorithm that identifies the input, processes, and output of programs <input type="checkbox"/> identifies the appropriate constants, variables etc. in the program <input type="checkbox"/> codes the algorithm using a programming language <input type="checkbox"/> documents comments to programmers <input type="checkbox"/> debugs and tests sample data <input type="checkbox"/> codes and formats program properly <input type="checkbox"/> evaluates final product to insure proper implementation (see below)	2	<b>Problem Solving Phase:</b> <input type="checkbox"/> defines the nature of the problem and outlines what the program must do. <input type="checkbox"/> creates a simple algorithm that identifies the input, processes, and output of programs <input type="checkbox"/> identifies the appropriate constants, variables etc. in the program <input type="checkbox"/> codes the algorithm using a programming language <input type="checkbox"/> documents comments to programmers <input type="checkbox"/> debugs and tests sample data <input type="checkbox"/> codes and formats program properly <input type="checkbox"/> evaluates final product to insure proper implementation (see below)		
	<b>Implementation Phase:</b> Creates a minimum of 3 programs containing the following (see sample assignment 1A) <input type="checkbox"/> <b>Input</b> - use of <ul style="list-style-type: none"><li>• stringed variables</li><li>• integer variables</li><li>• real variables</li><li>• numeric and string constants</li><li>• data entered through assignment statements and keyboard entry</li></ul> <input type="checkbox"/> <b>Processes</b> - use of <ul style="list-style-type: none"><li>• addition, subtraction, multiplication, division</li></ul> <input type="checkbox"/> <b>Output</b> - formatting required <ul style="list-style-type: none"><li>• rounds to a prescribed number of decimal places</li><li>• lines up decimal points</li><li>• inserts dollar signs where appropriate</li><li>• column formatting occurs</li></ul> <input type="checkbox"/> <b>Documentation and Presentation</b> <ul style="list-style-type: none"><li>• includes statement of problem</li><li>• presents flowchart to show how program was created</li><li>• presents user's guide with clear and concise instructions</li><li>• describes problems encountered during production and testing</li><li>• aesthetic presentation: follows acceptable design principles</li></ul>	2	<b>Implementation Phase:</b> Creates a minimum of 3 programs containing the following (see sample assignment 2A) <input type="checkbox"/> <b>Input</b> - same as introductory level <input type="checkbox"/> <b>Processes</b> - same as introductory level plus use of <ul style="list-style-type: none"><li>• pre-determine, precheck and postcheck looping constructs</li><li>• decision-making constructs</li></ul> <input type="checkbox"/> <b>Output</b> - same as introductory level <input type="checkbox"/> <b>Documentation and Presentation</b> - same as introductory level		
1			<b>Implementation Phase:</b> Restructures a minimum of 3 programs to include the following (see sample assignment 3A) <input type="checkbox"/> <b>Input</b> - same as intro level plus use of <ul style="list-style-type: none"><li>• appropriate local and global variables</li></ul> <input type="checkbox"/> <b>Processes</b> - same as intro level plus use of <ul style="list-style-type: none"><li>• pre-determine, precheck and postcheck looping constructs</li><li>• decision-making constructs</li><li>• appropriate sub-programs structures</li><li>• proper 1 - &amp; 2-way parameter passing</li></ul> <input type="checkbox"/> <b>Output</b> - same as introductory level <input type="checkbox"/> <b>Documentation and Presentation</b> - same as introductory level		
			<b>Implementation Phase:</b> Restructures a minimum of 3 programs to include the following (see sample assignment 3A) <input type="checkbox"/> <b>Input</b> - same as intro level plus use of <ul style="list-style-type: none"><li>• appropriate local and global variables</li></ul> <input type="checkbox"/> <b>Processes</b> - same as intro level plus use of <ul style="list-style-type: none"><li>• pre-determine, precheck and postcheck looping constructs</li><li>• decision-making constructs</li><li>• appropriate sub-programs structures</li><li>• proper 1 - &amp; 2-way parameter passing</li></ul> <input type="checkbox"/> <b>Output</b> - same as introductory level <input type="checkbox"/> <b>Documentation and Presentation</b> - same as introductory level		
Rating Scale	4 - Demonstrates initiative that exceeds required techniques /skills	3 - Consistently demonstrates all designated techniques /skills, rarely need prompting	2 - Demonstrates all designated techniques/skills, occasionally needs prompting	1 - Demonstrates most designated techniques/skills, frequently needs prompting	0 - Does not demonstrate designated technique/skill

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(Interim 1994)

CSB: 96 06 07



# ASSESSMENT CHECKLIST: INTERMEDIATE PROGRAMMING

## INFPRGM2

STUDENT: \_\_\_\_\_

MODULE: INF2

STANDARD		Students working at standard must demonstrate use of problem solving techniques when producing programs using criteria as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for at standard performance for the intermediate level modules. The rating scale at the bottom defines the different levels of competencies.				
AI Standard	Intermediate Level		AI Standard	Intermediate Level		
2	<b>Problem Solving Phase:</b> <ul style="list-style-type: none"><li><input type="checkbox"/> defines the nature of the problem and outlines what the program must do.</li><li><input type="checkbox"/> creates an algorithm that identifies the input, processes, and output of programs</li><li><input type="checkbox"/> identifies the appropriate constants, variables etc. in the program</li><li><input type="checkbox"/> codes the algorithm using a programming language</li><li><input type="checkbox"/> documents comments to programmers</li><li><input type="checkbox"/> debugs and tests sample data</li><li><input type="checkbox"/> codes and formats program properly</li><li><input type="checkbox"/> evaluates final product to insure proper implementation (see below)</li></ul>	2	2	<b>Problem Solving Phase:</b> <ul style="list-style-type: none"><li><input type="checkbox"/> defines the nature of the problem and outlines what the program must do.</li><li><input type="checkbox"/> creates a simple algorithm that identifies the input, processes, and output of programs</li><li><input type="checkbox"/> identifies the appropriate constants, variables etc. in the program</li><li><input type="checkbox"/> codes the algorithm using a programming language</li><li><input type="checkbox"/> documents comments to programmers</li><li><input type="checkbox"/> debugs and tests sample data</li><li><input type="checkbox"/> codes and formats program properly</li><li><input type="checkbox"/> evaluates final product to insure proper implementation (see below)</li></ul>	0 - Does not demonstrate designated technique/skill	
	<b>Implementation Phase:</b> creates a minimum of 3 programs containing the following (see sample assignment 4A/B for procedure-oriented--P/O or object-oriented--O/O) <ul style="list-style-type: none"><li><input type="checkbox"/> Input - use of<ul style="list-style-type: none"><li>• stringed, integer and real variables</li><li>• numeric and string constants</li><li>• data entered through assignment statements and keyboard entry</li><li>• appropriate local and global variables</li><li>• data is stored in appropriate derived data types</li><li>• error trapping occurs using appropriate derived data types</li><li>• data components of a class are identified (O/O only)</li></ul></li><li><input type="checkbox"/> Processes - use of<ul style="list-style-type: none"><li>• addition, subtraction, multiplication, division</li><li>• pre-determine, precheck and postcheck looping constructs</li><li>• decision-making constructs</li><li>• appropriate sub-program structures</li><li>• proper 1- &amp; 2- way parameter passing</li><li>• summation of data stored in arrays</li><li>• predefined string functions and procedures</li><li>• methods to be used in classes are identified (O/O only)</li><li>• objects are constructed employing user defined classes (O/O only)</li><li>• data is transferred to objects (O/O only)</li></ul></li><li><input type="checkbox"/> Output - formatting required<ul style="list-style-type: none"><li>• rounds to a prescribed number of decimal places</li><li>• lines up decimal points and inserts dollar signs where appropriate</li><li>• column formatting occurs</li></ul></li><li><input type="checkbox"/> Documentation and Presentation<ul style="list-style-type: none"><li>• presents statement of problem and algorithm to show how program was created</li><li>• presents user's guide with clear and concise instructions</li><li>• describes problems encountered during production and testing</li><li>• aesthetic presentation: uses acceptable design principles</li></ul></li></ul>					
2	<b>Implementation Phase:</b> creates a minimum of 3 programs containing the following (see sample assignment 5A/B for procedure-oriented--P/O or object-oriented--O/O) <ul style="list-style-type: none"><li><input type="checkbox"/> Input - same criteria as in programming IV plus<ul style="list-style-type: none"><li>• modifications to existing classes are identified (O/O only)</li><li>• characteristics to be inherited by new classes are identified (O/O only)</li></ul></li><li><input type="checkbox"/> Processes - same criteria as in programming IV plus use of<ul style="list-style-type: none"><li>• sorting based on differing criteria (P/O)</li><li>• search routines (P/O)</li><li>• merge routines (P/O)</li></ul></li><li><input type="checkbox"/> Output -same criteria as in programming IV</li><li><input type="checkbox"/> Documentation and Presentation - same criteria as in programming IV</li></ul>	2	2 - Demonstrates all designated techniques/skills, occasionally needs prompting	1 - Demonstrates most designated techniques/skills, frequently needs prompting	0 - Does not demonstrate designated technique/skill	
Rating Scale	4 - Demonstrates initiative that exceeds required techniques /skills	3 - Consistently demonstrates all designated techniques /skills, rarely need prompting				

CSB: 96 06 07

Information Processing /G.23  
(Interim 1994)

# ASSESSMENT CHECKLIST: ADVANCED PROGRAMMING APPLICATIONS

INPRGM3

STUDENT: \_\_\_\_\_

MODULE: INF

STANDARD		Students working at standard must demonstrate use of problem solving techniques when producing a program using criteria as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for at standard performance for the advanced level modules. The rating scale at the bottom defines the different levels of competencies.		
At Standard	Advanced Level - PAI	Advanced Level - PAII	Advanced Level - PAIII	
<b>3</b> <b>Problem Solving Phase:</b> <input type="checkbox"/> defines the nature of the problem and outlines what the program must do. <input type="checkbox"/> creates an algorithm that identifies the input, processes, and output of programs <input type="checkbox"/> identifies the appropriate constants, variables etc. in the program <input type="checkbox"/> codes the algorithm using a programming language <input type="checkbox"/> documents comments to programmers <input type="checkbox"/> debugs and tests sample data <input type="checkbox"/> codes and formats program properly <input type="checkbox"/> evaluates final product to insure proper implementation <b>Implementation Phase:</b> Creates programs containing the following (see sample assignment PA1) <input type="checkbox"/> Input - use of <ul style="list-style-type: none"> <li>stringed, integer and real variables</li> <li>numeric and string constants</li> <li>data entered through assignment statements and keyboard entry</li> <li>appropriate local and global variables</li> </ul> <input type="checkbox"/> Processes - use of <ul style="list-style-type: none"> <li>addition, subtraction, multiplication, division</li> <li>pre-determine, precheck and postcheck looping constructs</li> <li>decision-making constructs</li> <li>appropriate sub-programs are structures are selected</li> <li>proper 1 &amp; 2 way parameter passing</li> </ul> <input type="checkbox"/> Output - formatting required <ul style="list-style-type: none"> <li>rounds to a prescribed number of decimal places</li> <li>lines up decimal points</li> <li>inserts dollar signs where appropriate</li> <li>column formatting occurs</li> </ul> <input type="checkbox"/> Documentation and Presentation <ul style="list-style-type: none"> <li>presents statement of problem and algorithm to show how program was created</li> <li>presents user's guide with clear and concise instructions</li> <li>describes problems encountered during production and testing</li> <li>aesthetic presentation: uses acceptable design principles</li> </ul>	<b>Problem Solving Phase:</b> <input type="checkbox"/> defines the nature of the problem and outlines what the program must do. <input type="checkbox"/> creates an algorithm that identifies the input, processes, and output of programs <input type="checkbox"/> identifies the appropriate constants, variables etc. in the program <input type="checkbox"/> codes the algorithm using a programming language <input type="checkbox"/> documents comments to programmers <input type="checkbox"/> debugs and tests sample data <input type="checkbox"/> codes and formats program properly <input type="checkbox"/> evaluates final product to insure proper implementation <b>Implementation Phase:</b> In a second language creates programs containing the following (see sample assignment PA2) <input type="checkbox"/> Input - same as PAI level <input type="checkbox"/> Processes - same as PAI plus <input type="checkbox"/> Output - same as PAI <input type="checkbox"/> Documentation and Presentation - same as PAI	<b>Problem Solving Phase:</b> <input type="checkbox"/> defines the nature of the problem and outlines what the program must do. <input type="checkbox"/> creates an algorithm that identifies the input, processes, and output of programs <input type="checkbox"/> identifies the appropriate constants, variables etc. in the program <input type="checkbox"/> codes the algorithm using a programming language <input type="checkbox"/> documents comments to programmers <input type="checkbox"/> debugs and tests sample data <input type="checkbox"/> codes and formats program properly <input type="checkbox"/> evaluates final product to insure proper implementation <b>Implementation Phase:</b> In a second language creates or expands on programs to contain the following (see sample assignment PA3) <input type="checkbox"/> Input - same as PA2 plus <ul style="list-style-type: none"> <li>data is stored in arrays</li> <li>external data files (text and nontext) are created</li> <li>data is retrieved from external files</li> </ul> <input type="checkbox"/> Processes - same as PA2 plus <ul style="list-style-type: none"> <li>files (text and non-text) are created</li> <li>files are accessed (sequentially and randomly)</li> <li>the contents of files are modified</li> <li>data is appended to a file</li> </ul> <input type="checkbox"/> Output - same as PA2 <input type="checkbox"/> Documentation and Presentation - same as PA2	<b>Problem Solving Phase:</b> <input type="checkbox"/> defines the nature of the problem and outlines what the program must do. <input type="checkbox"/> creates an algorithm that identifies the input, processes, and output of programs <input type="checkbox"/> identifies the appropriate constants, variables etc. in the program <input type="checkbox"/> codes the algorithm using a programming language <input type="checkbox"/> documents comments to programmers <input type="checkbox"/> debugs and tests sample data <input type="checkbox"/> codes and formats program properly <input type="checkbox"/> evaluates final product to insure proper implementation <b>Implementation Phase:</b> In a second language creates or expands on programs to contain the following (see sample assignment PA3) <input type="checkbox"/> Input - same as PA2 plus <ul style="list-style-type: none"> <li>data is stored in arrays</li> <li>external data files (text and nontext) are created</li> <li>data is retrieved from external files</li> </ul> <input type="checkbox"/> Processes - same as PA2 plus <ul style="list-style-type: none"> <li>files (text and non-text) are created</li> <li>files are accessed (sequentially and randomly)</li> <li>the contents of files are modified</li> <li>data is appended to a file</li> </ul> <input type="checkbox"/> Output - same as PA2 <input type="checkbox"/> Documentation and Presentation - same as PA2	
<b>Rating Scale</b>	<b>4</b> - Demonstrates initiative that exceeds required techniques /skills	<b>3</b> - Consistently demonstrates all designated techniques /skills, rarely need prompting	<b>2</b> - Demonstrates all designated techniques/skills, occasionally needs prompting	<b>1</b> - Demonstrates most designated techniques/skills, frequently needs prompting <b>0</b> - Does not demonstrate designated technique/skill

**SAMPLE ASSIGNMENT: 1A**

Your school employs you to run the Xerox machine. They pay you \$5.00 per hour. They are obligated to withhold 30% of your gross pay for income tax purposes.

Write a program that allows for the entry of the school name, employee name, number, and the total number of hours worked for the week. The program should produce an output similar to the one below.

Henry Wisewood Senior High School	
Employee #1	Name: Harry Smith
	Hours Worked: 40
	Gross Pay: \$200.00
	Deductions: 66.67
	Net Pay: 133.33

**For standard, conditions and criteria see assessment checklist: Introductory and Intermediate Programming (INFP5M1), Introductory level.**

**SAMPLE ASSIGNMENT: 2A**

Your school employs a number of students to run the Xerox machine. The employees are paid \$5.00 per hour. The tax rate varies according to the amount earned (more than \$200.00 per week is calculated at 42%, greater than \$100.00 and less than \$200.00 is calculated at 30%, and less than or equal to \$100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Write a program that allows for the entry of the school, the employee name, number, and the total number of hours worked for the week for an unknown number of employees. The program should produce the following output:

Henry Wisewood Senior High School	
Employee #1	Name: Harry Smith
	Hours Worked: 40
	Gross Pay: \$200.00
	Deductions: 66.67
	Net Pay: 133.33
Employee #2	Name: Gordon Elliot
	Hours Worked: 50
	Gross Pay: \$275.00
	Deductions: 115.50
	Net Pay: 160.50



## PROGRAMMING: SAMPLE ASSIGNMENTS 1A-3A (continued)

Employee #3	Name:	Ken East
	Hours Worked:	10
	Gross Pay:	\$ 90.00
	Deductions:	0.00
	Net Pay:	90.00

For standard, conditions and criteria see assessment checklist: Introductory and Intermediate Programming (INFPGM1), Intermediate level.

## SAMPLE ASSIGNMENT: 3A

Your school employs a number of students to run the Xerox machine. The employees are paid \$5.00 per hour. The tax rate varies according to the amount earned (more than \$200.00 per week is calculated at 42%, greater than \$100.00 and less than \$200.00 is calculated at 30%, and less than or equal to \$100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Restructure the program in assignment 2A by creating a sub-program to accept the school name, employee number and name, and prints the heading for the pay stub. Write another sub-program that accepts the number of hours worked, calculates the gross pay, calculates the deductions and returns both to the main program. Next, pass these values to a third sub-program, which prints the hours worked, the gross pay, deductions and the net pay. The program should produce the following output:

Henry Wisewood Senior High School	
Employee #1	Name: Harry Smith
	Hours Worked: 40
	Gross Pay: \$200.00
	Deductions: 66.67
	Net Pay: 133.33
Employee #2	Name: Gordon Elliot
	Hours Worked: 50
	Gross Pay: \$275.00
	Deductions: 115.50
	Net Pay: 160.50
Employee #3	Name: Ken East
	Hours Worked: 10
	Gross Pay: \$ 90.00
	Deductions: 0.00
	Net Pay: 90.00

For standard, conditions and criteria see assessment checklist: Introductory and Intermediate Programming (INFPGM1), Intermediate level.

**SAMPLE ASSIGNMENT: 4A/B Procedure-Oriented or Object Oriented**

Your school employs a number of students to run the Xerox machine. The employees are paid \$5.00 per hour. The tax rate varies according to the amount earned (more than \$200.00 per week is calculated at 42%, greater than \$100.00 and less than \$200.00 is calculated at 30%, and less than or equal to \$100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Write a program that uses an array structure to store the data on three employees for one month. The data stored on each employee should include surname, first name, hours worked per week, employee number, number of years worked, calculates the gross pay, calculates the deductions and returns both to the main program. Next, pass these value to a third sub-program, which prints the hours worked, the gross pay, deductions and the net pay. The program should include appropriate derived data types for error trapping on data entry. The program should produce the following output:

Your school name		Summaries for the data for each employee for the month:				
Employee #1	Name: Harry Smith					
	Hours Worked: 40					
	Gross Pay: \$200.00	Name	Hours Worked	Total Gross	Total Deductions	Net Pay
	Deductions: 66.67	Harry Smith	160	\$ 800.00	\$266.68	\$533.32
	Net Pay: 133.33	Gordon Elliott	200	1100.00	462.00	638.00
		Ken East	72	360.00	0.00	360.00
Employee #2	Name: Gordon	Surname first for the data for each employee for the month:				
	Hours Worked: 50					
	Gross Pay: \$275.00	Name	Hours Worked	Total Gross	Total Deductions	Net Pay
	Deductions: 115.50	Smith, Harry	160	\$ 800.00	\$266.68	\$533.32
	Net Pay: 160.50	Elliott, Gordon	200	1100.00	462.00	638.00
		East, Ken	72	360.00	0.00	360.00
Employee #3	Name: Ken East	Summary for the firm:				
	Hours Worked: 10					
	Gross Pay: \$ 90.00	Total Gross				
	Deductions: 0.00	\$2260.00				
	Net Pay: 90.00	Total Deductions				
		\$728.68				
		Total Net				
		\$1531.32				

For standard, conditions and criteria see Assessment Checklist: Intermediate Programming (INFPGM2)

SAMPLE ASSIGNMENT: 5A Procedure-Oriented Programming Project

Your school employs a number of students to run the Xerox machine. The employees are paid \$5.00 per hour. The tax rate varies according to the amount earned (more than \$200.00 per week is calculated at 42%, greater than \$100.00 and less than \$200.00 is calculated at 30%, and less than or equal to \$100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Write a program that uses an array structure to store the data on three employees for one month. The data stored on each employee should include surname, first name, hours worked per week, employee number, number of years worked, calculates the gross pay, calculates the deductions and returns both to the main program. Next, pass these value to a third sub-program, which prints the hours worked, the gross pay, deductions and the net pay. The program should include appropriate derived data types for error trapping on data entry. The program should produce the following:

- data sorted by employee number
- data sorted by employee name
- data sorted by net pay
- a routine to add new employees and merge with existing staff
- a routine to search data for a given employee by name and number

For standard, conditions and criteria see Assessment Checklist: Intermediate Programming (INFPGM2)

SAMPLE ASSIGNMENT: 5B Object-Oriented Programming Project

Your school employs a number of students to run the Xerox machine. The employees are paid \$5.00 per hour. The tax rate varies according to the amount earned (more than \$200.00 per week is calculated at 42%, greater than \$100.00 and less than \$200.00 is calculated at 30%, and less than or equal to \$100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Modify the employee benefits to include health benefits and insurance benefits, whether the employee is single, married or not taking any benefits. Premiums for health benefits are deducted at the following rates:

Class	Health Premium	Insurance Premium
Single	\$ 5.00	2% of gross
Family	10.00	3% of gross
No Benefits	0.00	0%

Create a new class for management. This management team will include: the President, the Vice President, the Controller, and the Secretary. This new class shall inherit the health and insurance premiums from the employee class and include the salary rate for the position; these salaries are correspondingly, \$50,000.00, 45,000.00, \$40,000.00, \$30,000.00 paid monthly.

Write a program that will prompt the operator to enter the number or hours worked per month for each employee. Have it calculate the total gross paid per month to employees and management. Have it print out the total gross expenses to the company per month.

For standard, conditions and criteria see Assessment Checklist: Intermediate Programming (INFPGM2)

**SAMPLE ASSIGNMENT: PA1**

Your school employs a number of students to run the Xerox machine. The employees are paid \$5.00 per hour. The tax rate varies according to the amount earned (more than \$200.00 per week is calculated at 42%, greater than \$100.00 and less than \$200.00 is calculated at 30%, and less than or equal to \$100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Write a program that will create an external file of employee records. Have the program retrieve and print the contents of the files. Have the program append new employees to the file, and allow for the modification of any employee record in that data file. Have the program create a text file containing the month end summary.

**For standard, conditions and criteria see Assessment Checklist: Advanced Programming (INFPGM3)**

**SAMPLE ASSIGNMENT: PA2**

Recode the latest development of your employee program using a second language.

**For standard, conditions and criteria see Assessment Checklist: Advanced Programming (INFPGM3)**

**SAMPLE ASSIGNMENT: PA3**

In a second language expand your payroll program to include monthly data on multiple employees. Output should match criteria set in Programming V and Programming Applications I.

**For standard, conditions and criteria see Assessment Checklist: Advanced Programming (INFPGM3)**



STUDENT: \_\_\_\_\_

MODULE: INF \_\_\_\_\_

STANDARD Rating of 3		Students working at <b>standard</b> must demonstrate preparation of mailable documents (no errors in text) and well-formatted, based on rough draft, unformatted sources. The <b>at standard</b> level of competency for these advanced level modules is 3. The scale at the bottom defines the different levels of competencies.			
Simulation I		Specialization I (INF310)			
Area of Specialization _____		<div><input type="checkbox"/> Uses <b>terminology</b> - demonstrates use of appropriate terminology in both written and oral forms for chosen specialization.</div> <div><input type="checkbox"/> <b>Manages time and makes decisions</b> -<ul style="list-style-type: none"><li>• establishes purpose/use of activities</li><li>• establishes timelines/prioritize tasks</li><li>• selects and uses required resources (e.g. appropriate software to use)</li><li>• adheres to applicable office routines/practices</li></ul></div> <div><input type="checkbox"/> <b>Creates documents</b> - produces documents from rough draft, unformatted sources that simulate work in a specialized office environment including a variety of the following<ul style="list-style-type: none"><li>• letters , memos, reports</li><li>• newsletters, tables, enumerations</li><li>• specialized forms, charts, displays</li><li>• itineraries, calendars, agendas, minutes</li><li>• make and use specialized templates, macros or autotext</li></ul></div> <div><input type="checkbox"/> <b>Edit exiting documents</b> - retrieve and edit documents related to area of specialization</div>			
		<div><input type="checkbox"/> <b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of<ul style="list-style-type: none"><li>• spell check and/or grammar check</li><li>• thesaurus</li><li>• proofreading skills</li><li>• principles of design</li><li>• appropriate document formats</li><li>• aesthetically pleasing</li></ul></div>			
		<div><input type="checkbox"/> <b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of<ul style="list-style-type: none"><li>• spell check and/or grammar check</li><li>• thesaurus</li><li>• proofreading skills</li><li>• principles of design</li><li>• appropriate document formats</li><li>• aesthetically pleasing</li></ul></div>			
		<div><input type="checkbox"/> <b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of<ul style="list-style-type: none"><li>• spell check and/or grammar check</li><li>• thesaurus</li><li>• proofreading skills</li><li>• principles of design</li><li>• appropriate document formats</li><li>• aesthetically pleasing</li></ul></div>			
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		<div><input type="checkbox"/> <b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of<ul style="list-style-type: none"><li>• spell check and/or grammar check</li><li>• thesaurus</li><li>• proofreading skills</li><li>• principles of design</li><li>• appropriate document formats</li><li>• aesthetically pleasing</li></ul></div>			
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		<div><input type="checkbox"/> <b>Document Editing</b> - enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of<ul style="list-style-type: none"><li>• spell check and/or grammar check</li><li>• thesaurus</li><li>• proofreading skills</li><li>• principles of design</li>&lt;</ul></div>			

STUDENT: \_\_\_\_\_

MODULE: INF \_\_\_\_\_

STANDARD		Students working at standard must demonstrate problem solving techniques through the use of software functions noted in the checklists below and in the preparation of well designed and accurate documents. The columns to the left of the checklists indicate the minimum competency level for at standard performance for the introductory and intermediate level modules. The scale at the bottom defines the different levels of competencies. Note: the list of software functions indicated by an asterisk { * } may need to be adjusted to reflect software that is available.		
At Standard	Introductory Level (INF106)	At Standard	Intermediate Level (INF208)	
<b>1</b>	<b>Solves Problems with Spreadsheets</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> defines problems</li> <li><input type="checkbox"/> plans, designs and creates spreadsheets to solve problems and make decisions</li> <li><input type="checkbox"/> presents data visually through appropriate selection and use of chart graphing</li> <li><input type="checkbox"/> analyzes data to draw conclusions and make recommendations</li> <li><input type="checkbox"/> cites references where appropriate</li> </ul>	<b>2</b>	<b>Solves Problems with Spreadsheets</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> defines problems</li> <li><input type="checkbox"/> plans, designs and creates spreadsheets to solve problems and make decisions</li> <li><input type="checkbox"/> presents data visually through appropriate selection and use of chart graphing</li> <li><input type="checkbox"/> analyzes data to draw conclusions and make recommendations</li> <li><input type="checkbox"/> cites references where appropriate</li> </ul>	
<b>1</b>	<b>Formatting Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> enter text: headings/labels</li> <li><input type="checkbox"/> enter values: numbers, *dates, * time</li> <li><input type="checkbox"/> align cells: left, right, centre</li> <li><input type="checkbox"/> use text styles: bold, underscore, italics, borders, shading</li> <li><input type="checkbox"/> use font styles/sizes</li> <li><input type="checkbox"/> format numbers: %, \$, commas, decimals</li> <li><input type="checkbox"/> enter formulas using               <ul style="list-style-type: none"> <li>– operators (e.g. +, -, x, /)</li> <li>– numbers, constant values (i.e. 1, 10, 12.5, -16)</li> <li>– cell and range references (i.e. A10 and A1: A8)</li> </ul> </li> </ul>	<b>2</b>	<b>Formatting Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> continues to demonstrate use of basic software functions at introductory level</li> <li><input type="checkbox"/> enter a series of numbers or dates               <ul style="list-style-type: none"> <li>• look up</li> <li>• if/then</li> <li>• calculate/recalculate "what if" scenarios</li> </ul> </li> <li><input type="checkbox"/> hide columns</li> <li><input type="checkbox"/> incorporate macros</li> <li><input type="checkbox"/> use template function</li> <li><input type="checkbox"/> merge with another document</li> </ul>	
<b>1</b>	<b>File/Edit/Proofread/Manipulate Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> create new files (save as)</li> <li><input type="checkbox"/> open/close/update files (save)</li> <li><input type="checkbox"/> navigate around spreadsheet (cursors, go to, select, home, end, page up/down, *scroll bar/arrows)</li> <li><input type="checkbox"/> change appearance:               <ul style="list-style-type: none"> <li>– cell height/width/alignment</li> <li>– add/delete borders and shading</li> </ul> </li> </ul>	<b>2</b>	<b>File/Edit/Proofread/Manipulate Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> continues to demonstrate use of basic software functions at intro level</li> <li><input type="checkbox"/> insert/delete manual page breaks</li> <li><input type="checkbox"/> change headers/footers/page numbering</li> </ul>	
<b>1</b>	<b>Chart Formatting Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> convert spreadsheet to chart graphs (bar, line, pie, XY, combination)</li> <li><input type="checkbox"/> name charts/update/open/rename</li> <li><input type="checkbox"/> create/edit charts               <ul style="list-style-type: none"> <li>– add and delete axes</li> <li>– change scale of axes</li> <li>– add or remove right vertical axis</li> <li>– add or change category labels</li> </ul> </li> </ul>	<b>2</b>	<b>Chart Formatting Functions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> continues to demonstrate use of basic software functions at introductory level</li> <li><input type="checkbox"/> change marker shapes in line graphs</li> <li><input type="checkbox"/> explode a pie chart</li> <li><input type="checkbox"/> mix lines and bars in a graph</li> <li><input type="checkbox"/> duplicate a chart</li> <li><input type="checkbox"/> merge with another document</li> </ul>	
<b>Rating Scale</b>	<b>4</b> - Demonstrates initiative that exceeds required techniques /skills	<b>3</b> - Consistently demonstrates all designated techniques /skills, rarely need prompting	<b>2</b> - Demonstrates all designated techniques/skills, occasionally needs prompting	<b>1</b> - Demonstrates most designated techniques/skills, frequently needs prompting
				<b>0</b> - Does not demonstrate designated technique/skill

CSB: 96 06 07

Information Processing /G.31  
(Interim 1994)



STUDENT :

MODULE: INF

STANDARD	Students working at <b>standard</b> must demonstrate the technique requirements outlined in the checklists below. The columns to the left of the checklists indicate the minimum rating for at standard performance for introductory, intermediate and advanced level modules. The rating scale on the right-hand side defines the levels of competencies and should be applied when assessing student performance.
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Observation of Student	Minimum Standard (Intro Level)	Minimum Standard (Inter Level)	Minimum Standard (Adv. Level)	TECHNIQUE REQUIREMENTS <i>The student:</i>
—	3	3	3	<b>Eye Focus:</b> keeps eyes on copy when doing basic text/data entry (Observations should occur during timings or drills on straight copy materials, using the syllabic intensity [SI] defined within the module).
—	2	3	3	<b>Keystroking:</b> <input type="checkbox"/> uses correct fingering for alphabetic, punctuation, numeric, and symbol keys as specified in the module <input type="checkbox"/> begins and ends all keystrokes at home row position <input type="checkbox"/> anchors the appropriate fingers when entering text (returns to homerow without pause) <input type="checkbox"/> uses the thumb for the spacebar <input type="checkbox"/> uses enter, shift and tab keys with correct fingers
—	1	2	3	<b>Service Keys:</b> Uses appropriate fingers/hand movements to: <input type="checkbox"/> edits (e.g. insert, delete, backspace) <input type="checkbox"/> moves within document (home, end, page up, page down, arrows) <input type="checkbox"/> activates function keys
—	2	3	3	<b>Body Position:</b> Maintains proper, relaxed body position: <input type="checkbox"/> comfortable distance from keyboard (e.g. hand-span away) <input type="checkbox"/> centered in front of keyboard <input type="checkbox"/> back erect, lower back against back of chair <input type="checkbox"/> feet flat on floor <input type="checkbox"/> fingers curved, wrists level, not resting on keyboard <input type="checkbox"/> arms appropriately positioned

## Rating Scale

<b>4</b>	Demonstrates initiative that exceeds required techniques/skills
<b>3</b>	Consistently demonstrates all designated techniques/skills, rarely need prompting
<b>2</b>	Demonstrates all designated techniques/skills, occasionally needs prompting
<b>1</b>	Demonstrates most designated techniques/skills, frequently needs prompting
<b>0</b>	Does not demonstrate designated technique/skill

## REFLECTIONS/COMMENTS

STUDENT: \_\_\_\_\_

MODULE: INF \_\_\_\_\_

STANDARD	Students working at standard must demonstrate appropriate use of the software functions as noted in the checklists below and during the preparation of mailable documents (no errors in text and format). The columns to the left of the checklists indicate the minimum competency for <b>at standard</b> performance for the introductory, intermediate and advanced level modules. The scale at the bottom defines the different levels of competencies. Note: the list of software functions indicated by an asterisk (*) may need to be adjusted to reflect software that is available.
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At Standard	Introductory Level- (INF103)	At Standard	Intermediate Level (INF205)	At Standard	Advanced Level (INF306)
1	<p><b>Document Production</b> - a collection of mailable documents focusing on personal applications consisting of basic</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> letters (e.g. personal, personal business letters, memos)</li> <li><input type="checkbox"/> reports (e.g. essays, poems, journals, position papers, research papers)</li> <li><input type="checkbox"/> tables (e.g. calendars, recipes, lists)</li> </ul> <p>that demonstrates the use of the following entry level software functions.</p> <p><b>Formatting Functions:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> rulers/margins/line spacing</li> <li><input type="checkbox"/> text alignment: left, center, right, full justified</li> <li><input type="checkbox"/> tabs/indents</li> <li><input type="checkbox"/> text styles (e.g. bold, underscore, italics, subscript, superscript)</li> <li><input type="checkbox"/> font types/sizes</li> <li><input type="checkbox"/> * basic table functions</li> <li><input type="checkbox"/> *subscripts/superscripts</li> <li><input type="checkbox"/> bulleted and numbered lists</li> <li><input type="checkbox"/> borders/shading</li> <li><input type="checkbox"/> footers/headers</li> <li><input type="checkbox"/> page numbering</li> <li><input type="checkbox"/> page breaks (i.e. hard breaks, widows/orphans)</li> <li><input type="checkbox"/> *insert graphics (size and scale)</li> <li><input type="checkbox"/> help function</li> <li><input type="checkbox"/> *preview/print text</li> </ul>	2	<p><b>Document Production</b> - continues to add to collection of mailable documents focusing on both personal and business applications through the production of detailed</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> letters</li> <li><input type="checkbox"/> memos</li> <li><input type="checkbox"/> reports</li> <li><input type="checkbox"/> tables</li> </ul> <p>that demonstrates the use of the following software functions.</p> <p><b>Formatting Functions:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> continues to use functions from introductory level</li> <li><input type="checkbox"/> columns/tables</li> <li><input type="checkbox"/> footnotes/endnotes</li> <li><input type="checkbox"/> inserting graphics in boxes/ frames (crop)</li> <li><input type="checkbox"/> preset macros</li> <li><input type="checkbox"/> create simple macros</li> <li><input type="checkbox"/> templates</li> <li><input type="checkbox"/> auto text</li> <li><input type="checkbox"/> mail merges</li> <li><input type="checkbox"/> envelopes and labels features</li> <li><input type="checkbox"/> math calculations</li> <li><input type="checkbox"/> additional auto functions (e.g. style gallery, auto format, auto table format)</li> <li><input type="checkbox"/> additional insert functions (e.g. index, table of contents, figures and authorities, outlines)</li> </ul>	3	<p><b>Document Production</b> - continues to add to collection of mailable documents focusing on business applications through the production of complex</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> letters</li> <li><input type="checkbox"/> memos</li> <li><input type="checkbox"/> tables</li> <li><input type="checkbox"/> reports</li> </ul> <p>that demonstrates the use of the following software functions.</p> <p><b>Formatting Functions:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> continues to use functions from introductory and intermediate levels</li> <li><input type="checkbox"/> customizing features (e.g. toolbars and menus)</li> <li><input type="checkbox"/> desktop publishing features consisting of             <ul style="list-style-type: none"> <li>• brochure layouts with multiple panels</li> <li>• character and paragraph spacing</li> <li>• wrapping text around boxes/frames</li> </ul> </li> <li><input type="checkbox"/> create more detailed macros</li> <li><input type="checkbox"/> *draw features</li> <li><input type="checkbox"/> math calculations</li> <li><input type="checkbox"/> table sorts</li> <li><input type="checkbox"/> establish and use libraries and macros</li> </ul>
1	<p><b>File/Edit/Proofread/Manipulate Functions</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> select text, *format painter</li> <li><input type="checkbox"/> cut, copy, paste</li> <li><input type="checkbox"/> move and delete</li> <li><input type="checkbox"/> zoom</li> <li><input type="checkbox"/> spell check</li> <li><input type="checkbox"/> *grammar check</li> <li><input type="checkbox"/> thesaurus</li> <li><input type="checkbox"/> search/find/replace</li> </ul>	2	<p><b>File/Edit/Proofread/Manipulate Functions</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> continues to use all functions from introductory level</li> <li><input type="checkbox"/> *show/hide non print characters</li> <li><input type="checkbox"/> *revision marks</li> <li><input type="checkbox"/> switching/copying/pasting between documents</li> </ul>	3	<p><b>File/Edit/Proofread/Manipulate Functions</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> continues to use all functions from introductory and intermediate levels</li> <li><input type="checkbox"/> bookmark</li> <li><input type="checkbox"/> edit macros</li> <li><input type="checkbox"/> *protect document</li> </ul>

Rating Scale	4 - Demonstrates initiative that exceeds required techniques /skills	3 - Consistently demonstrates all designated techniques /skills, rarely need prompting	2 - Demonstrates all designated techniques/skills, occasionally needs prompting	1 - Demonstrates most designated techniques/skills, frequently needs prompting	0 - Does not demonstrate designated technique/skill
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CSB: 96 06 07

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(Interim 1994)

STUDENT : \_\_\_\_\_ MODULE: M&amp;M \_\_\_\_\_

STANDARD	Students working at standard must demonstrate the technique requirements outlined in the checklists below. The columns to the left of the checklists indicate the minimum rating for <i>at standard</i> performance for introductory, intermediate and advanced level modules. The rating scale on the right-hand side defines the levels of competencies and should be applied when assessing student performance.			
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Observation of Student	Minimum Standard (Intro Level)	Minimum Standard (Inter Level)	Minimum Standard (Adv. Level)	TECHNIQUE REQUIREMENTS <i>The student:</i>
—	1	2	3	<b>Work Station Routines</b> <input type="checkbox"/> appropriately adjusts monitor, keyboard, desk, chair, and other equipment to ensure workstation is ergonomically appropriate, (comfortable, healthy, safe and efficient) if <input type="checkbox"/> maintains good body position <input type="checkbox"/> observes ethical, legal and security measures in handling software and hardware (copyright, privacy, confidentiality) <input type="checkbox"/> maintains an organized, neat workstation
—	2	3	3	<b>File Management</b> <input type="checkbox"/> labels, stores, accesses, back-ups, and uses files and disks appropriately <input type="checkbox"/> creates and uses appropriate filenames and directories to organize information in a logical way <input type="checkbox"/> saves, retrieves, moves, copies, deletes, renames files and directories as required
—	1	2	3	<b>Time Management/Organization</b> <input type="checkbox"/> locates/uses multiple resources when needing assistance (e.g. print, on-line, teacher, peers) <input type="checkbox"/> allows adequate time for set-up and close-down procedures <input type="checkbox"/> manages time effectively
—	2	3	3	<b>Professionalism</b> <input type="checkbox"/> takes initiative in evaluating and adjusting work processes and products to ensure they meet or exceed the standard <input type="checkbox"/> responds to problems and accepts challenges by thinking critically and creatively <input type="checkbox"/> uses related terminology appropriately

## Rating Scale

4	Demonstrates initiative that exceeds required techniques /skills
3	Consistently demonstrates all designated techniques/skills, rarely need prompting
2	Demonstrates all designated techniques/skills, occasionally needs prompting
1	Demonstrates most designated techniques/skills, frequently needs prompting
0	Does not demonstrate designated technique/skill

## REFLECTIONS/COMMENTS



ASSESSMENT CHECKLIST:	A. FILE MANAGEMENT PROCEDURES	INF101-I
	B. TEXT/DATA ENTRY	
	C. COMPUTER WORKSTATION COMPONENTS	

STUDENT: \_\_\_\_\_ DATE: \_\_\_\_\_

STANDARD	Students working <b>at standard</b> will demonstrate appropriate use of <i>all</i> of the points listed on the following three charts, but may need occasional prompting. Students working <b>above standard</b> will rarely need prompting. Note the file management procedures and workstation components may need to be adjusted to better reflect the type of computer equipment and software available.
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A. FILE MANAGEMENT PROCEDURES

Observation of Student	<i>The student can:</i>
Y N	1. boot computer and/or log-on to network
Y N	2. access programs /move between programs
Y N	3. create, use and remove directories/folders
Y N	4. create files
Y N	5. save and retrieve files
Y N	6. rename files
Y N	7. back-up files
Y N	8. edit files
Y N	9. copy files
Y N	10. move between files
Y N	11. delete files
Y N	12. format disks
Y N	13. select printer and print files

C. COMPUTER WORKSTATION COMPONENTS

	<i>The student identifies and explains use of:</i>
	<b>Hardware Architecture, Configurations, Peripherals</b>
Y N	1. input systems (e.g. keyboard, mouse, voice, tablet)
Y N	2. operating platforms/systems (e.g. MAC, DOS, WINDOWS)
Y N	3. output devices (e.g. monitor, printer)
Y N	4. communication devices - (e.g. modem)
Y N	5. storage mediums (floppy disks, hard drive, network, CD)
	<b>Software</b>
Y N	1. applications (word processing, spreadsheet, integrated, etc.)
Y N	2. shell (e.g. Windows, Finder)
Y N	3. utility (e.g. virus, checkers)

B. TEXT-DATA ENTRY PROCEDURES

Observation of Student	<i>The student:</i>	Student Work	<i>The student:</i>
	<b>demonstrates "touch keyboarding" (correct fingering and eye focus) with:</b>		<b>produces error-free documents by:</b>
Y N	1. alphabetic keys	Y N	1. proofreading text and data (manually and with spell checks if available)
Y N	2. numeric keys (on alpha keyboard)	Y N	2. editing text and data
Y N	3. basic punctuation keys (.,:;.,?:)		
Y N	4. shift keys, return/enter		

STUDENT : \_\_\_\_\_ MODULE: INF \_\_\_\_\_

<b>STANDARD</b>	Students must prepare and present a report which meets the requirements outlined in the chart. The column to the left of the chart indicates the <b>at standard</b> level of competency. The scale on the right-hand side defines the levels of competencies and should be applied when assessing student performance. The minimum rating for <i>at standard</i> performance is level <b>1</b> , a rating of <b>2</b> or above indicates <i>above standard</i> performance.
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Observation of Student	Minimum Standard	PRESENTATION - REPORT REQUIREMENTS <i>The student:</i>
—	<b>1</b>	<input type="checkbox"/> <b>Preparation and Planning:</b> <ul style="list-style-type: none"> <li>• sets goals and follows instructions accurately</li> <li>• responds to directed questions and follows necessary steps to find answers</li> <li>• accesses basic in-school/community information sources</li> <li>• interprets and organizes information into a logical sequence</li> <li>• records information accurately using correct technical terms</li> <li>• uses time effectively</li> </ul>
—	<b>1</b>	<input type="checkbox"/> <b>Presentation and Reporting</b> <ul style="list-style-type: none"> <li>• demonstrates effective use of one or more communication media; e.g.,  <i>Written:</i> spelling, punctuation, grammar, and basic format  <i>Oral</i> - voice projection, body language  <i>Audio-Visual</i> - techniques, tools</li> </ul>
—	<b>1</b>	<b>Content:</b> The report provides a thorough <ul style="list-style-type: none"> <li><input type="checkbox"/> description of current or emerging technological initiative or issue</li> <li><input type="checkbox"/> actual or potential impact on individual and society</li> <li><input type="checkbox"/> list of sources of information</li> </ul>

**Rating Scale**

<b>4</b>	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
<b>3</b>	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
<b>2</b>	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
<b>1</b>	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
<b>0</b>	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

**REFLECTIONS/COMMENTS**

STUDENT:

STANDARD IS 2 IN EACH APPLICABLE TASK		Rating Scale	
4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.	3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.	1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.		
REFLECTIONS/COMMENTS			

CRITERIA	
Observations of Student	The student
4	<u>Sets Up and Installs a System</u> <ul style="list-style-type: none"> <li><input type="checkbox"/> identifies need of users and tools (e.g. software and other resources available)</li> <li><input type="checkbox"/> designs a plan for installation and configuration of system</li> <li><input type="checkbox"/> organizes tools for installation and configuration of system</li> <li><input type="checkbox"/> makes use of technical manuals to set-up and install hardware and software</li> <li><input type="checkbox"/> connects hardware (e.g. system and cabling)</li> <li><input type="checkbox"/> installs software (well-organized and appropriately named directories on specified drive) for a variety of software including operating system, applications and utilities</li> </ul>
4	<u>Trouble Shoots Software and Hardware</u> <ul style="list-style-type: none"> <li><input type="checkbox"/> tests system after installation</li> <li><input type="checkbox"/> tests system with users for satisfaction</li> <li><input type="checkbox"/> builds defense against viruses</li> <li><input type="checkbox"/> builds defense against intentional and unintentional user exploration</li> <li><input type="checkbox"/> identifies and organizes available resources for users</li> </ul>
4	<u>Manages and Maintains a System</u> <ul style="list-style-type: none"> <li><input type="checkbox"/> outlines a long term plan for upgrading technology (e.g. cost/budget, maintenance, effectiveness of system)</li> <li><input type="checkbox"/> establishes policy and procedures on effective use of technology (e.g. personnel issues regarding effective use)</li> <li><input type="checkbox"/> provides training and/or support to those using the system</li> </ul>



**STUDENT:**

<b>CRITERIA</b>	
<i>The student</i>	
<b>Researches</b> technology related to robotics <ul style="list-style-type: none"> <li><input type="checkbox"/> describes the types of tasks robots perform</li> <li><input type="checkbox"/> explains how robotics are effecting society now and in the future</li> <li><input type="checkbox"/> diagrams a basic robot, labelling components including the controller</li> <li><input type="checkbox"/> describes the functions of labelled components</li> <li><input type="checkbox"/> explains the processes used to control robots</li> <li><input type="checkbox"/> gives an example of when it would be feasible to use a robot over a human to perform a task</li> <li><input type="checkbox"/> gives an example of when it would be feasible to use a human over a robot to perform a task</li> </ul>	4 3 2 1 0
<b>Assembles the Robot</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> follows a blue print design</li> <li><input type="checkbox"/> determines the purpose of the robot from the provided design</li> <li><input type="checkbox"/> assesses the design capabilities of the completed robot</li> <li><input type="checkbox"/> tests the functionality of the robot to perform designated task</li> </ul>	4 3 2 1 0
<b>Presents the Robot</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> describes the purpose of the robot</li> <li><input type="checkbox"/> demonstrates the use of the robot to perform designated task</li> <li><input type="checkbox"/> explains how the interrupts are used to control the robot</li> <li><input type="checkbox"/> evaluates the capabilities of the robot (what it can and cannot do)</li> </ul>	4 3 2 1 0

**STANDARD IS 2 IN EACH APPLICABLE TASK**  
**Rating Scale**

<b>4</b>	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
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<b>0</b>	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

**REFLECTIONS/COMMENTS**

This project can be completed individually or as a group.

### **Research**

Research and prepare a presentation in your choice of format (e.g. oral, written, multi-media, visual poster) dealing with the technology of robotics. The presentation should include the following topics

- types of tasks robots perform
- how robotics are effecting society now and in the future
- diagram a basic robot, labelling components including the controller
- functions of labelled components
- processes used to control robots
- examples of when it would be feasible to use a robot over a human to perform a task
- examples of when it would be feasible to use a human over a robot to perform a task

### **Assembly of Robot**

When assembling the robot you should be able to

- follow the blue print design given
- determine the purpose of the robot from provided designs
- assess the design limitations of the completed robot
- test the functionality of the robot to perform task

### **Presentation of Robot**

Present a demonstration of the robot to your teachers and/or class and discuss the following:

- describe the purpose of the robot
- demonstrate the robot's ability to perform a task
- explain how the interrupts are used to control the robot
- explain how the provided code utilized or did not utilize the full functionality of the robot in the assigned task
- recommend more effective and efficient uses of the code
- evaluate the code's ability to complete the task assigned in the project
- evaluate your own presentation of the robot

STUDENT NAME(S)

TASK	OBSERVATION/RATING				
Planning and Presentation	4	3	2	1	0
Analysis – Hardware	4	3	2	1	0
Analysis – Software	4	3	2	1	0
Analysis – Report	4	3	2	1	0
Presenting/Reporting	4	3	2	1	0

**STANDARD IS 2 IN EACH APPLICABLE TASK**

Rating Scale

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Information Processing /G.40  
(Interim 1994)**TASK CHECKLIST** - criteria for intermediate level

The student :

- ☐ **Preparation and Planning**
- sets goals and describes steps to achieve them
  - uses personal initiative to formulate questions and find answers
  - accesses a range of relevant in-school/community resources
  - interprets, organizes and combines information into a logical sequence
  - records information accurately with appropriate supporting detail and using correct technical terms
  - plans and uses time effectively
  - gathers and responds to feedback regarding approach to task and project status

**ANALYSIS - HARDWARE****Content:** analyzes and compares

- ☐ two different computer systems (internal components, peripheral devices) based on
- client needs
  - information base
  - implementation time lines
  - financial costs
  - workstation requirements
  - inservice training
  - support services
  - warranties

**ANALYSIS - SOFTWARE****Content:** analyzes and compares

- ☐ three task-specific software packages on the basis of:
- hardware/operating system requirements
  - user friendliness
  - training/learning effectiveness
  - instructional support

- command/function parameters screen/page characteristics
- intended use/audience
- incompatibility with other software

**ANALYSIS REPORT****Content:**

- ☐ prepares a report that responds to an identified need to provide or upgrade a computer system. The report will provide recommendations and rationale for a particular hardware/software components (recommendation and reasons) that addresses:
- client needs
  - information base
  - implementation time lines
  - financial costs
  - workstation requirements
  - inservice training
  - support services
  - warranties
  - legal restrictions

☐ **Presenting/Reporting**

- demonstrates effective use of at least two communication media:  
*e.g., Written: spelling, punctuation, grammar, format (formal/informal)*  
*Oral: voice projection, body language, appearance*
- *Visual: techniques, tools, clarity*  
maintains acceptable grammatical and technical standards through proof-reading and editing
- provides an introduction that describes the purpose and scope of the project
- communicates ideas into a logical sequence with sufficient supporting detail
- states a conclusion by synthesizing the information gathered
- provides a reference list that includes 5 or more relevant information sources

CSB: 96 06 07

## STUDENT:

CRITERIA	
Observations of Students	The student
4 3 2 1 0	<b>Uses the Network</b> <input type="checkbox"/> logs in and out; uses password (if necessary) <input type="checkbox"/> demonstrates the ability to access information and programs on a LAN. <input type="checkbox"/> demonstrates the ability to download or upload files or data on a LAN. <input type="checkbox"/> organizes information on a LAN (e.g. create directories, name files etc.)
4 3 2 1 0	<b>Relates How Networks Work</b> <input type="checkbox"/> identifies the LAN's purpose/capabilities <input type="checkbox"/> researches and compares network topologies <input type="checkbox"/> researches installation and sets-up hardware and software of a LAN
4 3 2 1 0	<b>Installs and Trouble Shoots Software and Hardware</b> <input type="checkbox"/> designs a plan for installation and configuration of a LAN <input type="checkbox"/> installs and connects LAN hardware <input type="checkbox"/> installs LAN software <input type="checkbox"/> establishes users groups & security rights <input type="checkbox"/> installs application software <input type="checkbox"/> tests system after installation and make changes as necessary <input type="checkbox"/> tests system with users for satisfaction <input type="checkbox"/> builds a defense against viruses and intentional or unintentional user exploration
4 3 2 1 0	<b>Presents a Proposal for Maintaining a LAN</b> <input type="checkbox"/> provides technical support for a LAN for a period of time <input type="checkbox"/> plans and establishes policies & procedures for: <ul style="list-style-type: none"> <li>• ethical use of software</li> <li>• network access, security and backup protection</li> <li>• user access, rights, passwords</li> <li>• file/disk management</li> <li>• software and data upgrades</li> </ul>

## STANDARD IS 2 IN EACH APPLICABLE TASK

## Rating Scale

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## REFLECTIONS/COMMENTS



## STUDENT:

Observations of Student	<i>The student</i>	CRITERIA
4 3 2 1 0	<u>Plans and Prepares</u> <input type="checkbox"/> identifies a business or personal scenario that could benefit from the development of an information management tool. <input type="checkbox"/> identifies user's needs and determines how the software can be used to meet those needs	
4 3 2 1 0	<u>Designs a Software Tool</u> - input and interface, storage and analysis, output functions <input type="checkbox"/> creates an easy user interface (menu, form, or screen) <input type="checkbox"/> links initial interface to other screens, forms, tables or spreadsheets <input type="checkbox"/> demonstrates ability to create multiple access levels/rights for a variety of users <input type="checkbox"/> demonstrates elements and principles of design by importing scanned images, clipart, or sound and correctly arrange links <input type="checkbox"/> creates a relational database - labels and analyses tools in spreadsheet that will be used to solve the problem. <input type="checkbox"/> creates forms, reports, and graphs that displays or prints results of analysis of data, searches, sorts queries. (note: this can be done on screen, form, or report design)	
4 3 2 1 0	<u>Tests and Implements</u> <input type="checkbox"/> uses sample data to check accuracy of the software tool developed <input type="checkbox"/> checks if this meets initial needs of user(s) <input type="checkbox"/> makes necessary changes or adjustments <input type="checkbox"/> inputs information <input type="checkbox"/> edits, retrieves and manipulates information	
1 2 3 4 0	<u>Presents Software Tool</u> <input type="checkbox"/> demonstrates how the software tool performs <input type="checkbox"/> discusses its capabilities and limitations as it relates to the following <ul style="list-style-type: none"> <li>• user needs</li> <li>• ability to solve the problem in the scenario</li> <li>• upgradability (use of ability to change to meet future needs or improvements)</li> </ul>	

## STANDARD IS 2 IN EACH APPLICABLE TASK

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## REFLECTION/COMMENTS

## STUDENT:

CRITERIA	
Observation of Student	<i>The student</i>
4 3 2 1 0	<p><b>Researches</b> (expert systems, virtual reality [AI interfaces] or other identified AI technologies such as natural languages, robotics, exploratory programming)</p> <p><input type="checkbox"/> gives an explanation of what the AI technology is and how it is affecting society now and in the future.</p> <p><input type="checkbox"/> gives a description of the jobs/tasks that the technology can perform in industry and personal living</p> <p><input type="checkbox"/> diagrams the technology and its components, label and give a brief description of components</p> <p><input type="checkbox"/> identifies and gives examples of the advantages and disadvantages of using this type of technology to perform various types of tasks</p> <p><input type="checkbox"/> provides examples of when it would be feasible to use the emerging technology over a human or other present technology to perform a task</p> <p><input type="checkbox"/> describes other important criteria related to specific technology</p> <p><input type="checkbox"/> presents the research in an organized format of choice</p>
4 3 2 1 0	<p><b>Uses AI Software</b></p> <p><input type="checkbox"/> selects and/or identifies software being used</p> <p><input type="checkbox"/> plans and outlines a task or define and outline the problem</p> <p><input type="checkbox"/> describes the uses of the selected software</p> <p><input type="checkbox"/> demonstrates use of selected software to perform task or solve problem</p> <p><input type="checkbox"/> tests the program developed to perform task or solve problem</p> <p><input type="checkbox"/> adjusts and/or modifies program as a result of test</p>
4 3 2 1 0	<p><b>Presents the Program</b></p> <p><input type="checkbox"/> identifies purpose of program</p> <p><input type="checkbox"/> demonstrates use of program to complete task or solve problem</p> <p><input type="checkbox"/> explains the details of the program (how it works, challenges to overcome, etc.)</p> <p><input type="checkbox"/> evaluates the end results of the program (what it can and cannot do)</p> <p><input type="checkbox"/> evaluates presentation of the program</p>

## STANDARD IS 2 IN EACH APPLICABLE TASK

## Rating Scale

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## REFLECTIONS/COMMENTS



This project can be completed individually or as a group.

### Research

The five major areas of artificial intelligence includes **expert systems, natural language, robotics, improved human interfaces (e.g. virtual reality), and exploratory programming**. The area that has received the most attention for commercial use is expert systems. Some areas that expert systems are being functional in are; information processing, pattern recognition, game-playing computers, and applied fields such as medical diagnosis. **This project will centre around expert systems.**

Within the area of expert systems, you will research and develop a portfolio to gain an introductory knowledge of the concepts. In the second part of the project you will learn how to program a piece of software related to expert systems that will solve a defined problem and you will conclude the project by presenting the program.

### **Your portfolio should begin with the following**

- *Topic* - describe the nature of your research (select a specific area /field to study, e.g. medical, computer games industry etc.)
- *Resources* - provide a list of available resources you will use
- *Timeline* - a timeline of when activities are expected to be completed
- *Outcomes* - what you expect to achieve by the end of this project

### **Continue your portfolio by including research consist of**

- an explanation of what expert systems are and how this technology is affecting society now, and in the future (e.g. ethics)
- a description of the jobs/tasks expert systems can perform in industry and personal living
- description of the area /field of expert systems being explored and a detailed diagram or explanation of the expert system.
- identify and provide examples of the advantages and disadvantages of using expert systems to perform various types of tasks in your chosen area.
- identify and provide examples of when it would be feasible to use expert systems over a human or other technology in your chosen area.
- describe other important criteria related to expert systems

*Note: Within your above research you should cover topics such as fuzzy logic, state space theory: prepositional logic, interpreted language, knowledge base (facts and rules) + inference engine (reasoning ability) = expert systems ability to perform conclusions, artificial intelligence; the use of user interfaces (i.e. virtual reality) in expert systems; and explanation facilities (systems ability to justify conclusions) in expert systems.*

Application of Software

Using PROLOG, LISP or another artificial intelligence software package, write a program that solves one of the following problems.

- A farmer is at the river and needs to get to the other side. He has with him a fox, a goose, and some grain. He can only take one item with him in the boat at a time. If the fox will eat the goose and the goose will eat the grain how will he get all three of his possessions over to the other side of the river without them being damaged.
- Write a program that allows two people to play tic-tac-toe on the computer.
- Write a program that solves a problem as defined by you and/or your teacher

Presentation of Program

Present a demonstration of the program to your teacher and/or class and discuss the following:

- identify purpose of program
- demonstrate use of program to solve problem
- explain the details of the program (how it works, challenges to overcome, etc.)
- evaluate the end results of the program (what it can and cannot do)
- evaluate presentation of the program



# INFORMATION PROCESSING

## SECTION H: LINKAGES/TRANSITIONS

(INTERIM)

### TABLE OF CONTENTS

This section of the GSI has been designed to provide an overview of linkages and transitions of CTS modules with a number of organizations. The charts and information presented in this section will assist CTS students and teachers in understanding the potential application of CTS modules as students move into the workplace.

#### LINKAGES

With Other CTS Strands .....	H.1
With Other Secondary Programs .....	H.2

#### TRANSITIONS

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Information Processing: Connections Across the Curriculum .....	H.6
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Information Processing: Summary of Related Post-secondary Programs .....	H.12



## LINKAGES/TRANSITIONS

### LINKAGES

The Information Processing strand supports the integration of computers in all CTS strands as well as in all core or other complementary programs. In addition, the competencies developed in the Information Processing strand support a wide range of transitions into the workplace or related post-secondary programs.

### With Other CTS Strands

There are direct and indirect linkages between Information Processing and all of the CTS strands, particularly where students are able to use computers as a learning tool. Linkages with other CTS strands are identified on the chart, Linkages With Other CTS Strands, in this section. For example, students in the following strands could use computer technology to:

Foods	<ul style="list-style-type: none"><li>determine nutritional content or design and print menus</li></ul>
Legal Studies	<ul style="list-style-type: none"><li>undertake research of precedents (database) or access some of the legal libraries or bulletin boards</li></ul>
Tourism Studies	<ul style="list-style-type: none"><li>design room and table layouts for a banquet or access the travel databases</li></ul>
Communication Technology	<ul style="list-style-type: none"><li>apply knowledge of desktop publishing software in projects requiring layout and design</li></ul>
Financial Management	<ul style="list-style-type: none"><li>apply knowledge of spreadsheets and financial management software to manage personal and business finances</li></ul>
Design Studies	<ul style="list-style-type: none"><li>use understanding of software applications as a basis for learning about computer assisted design software</li></ul>
Enterprise and Innovation	<ul style="list-style-type: none"><li>use competency in productivity software packages to prepare proposals and analyze the financial implications of ventures</li></ul>
Career Transitions	<ul style="list-style-type: none"><li>use competency in word processing and graphic design to prepare resumes and related correspondence.</li></ul>

Note that the project modules from the Career Transitions strand may be combined with modules from the Information Processing strand to provide increased opportunity for students to develop expertise and refine their competencies in a particular module or modules. For example, the project modules could enhance the

programming theme with the following projects:

- machine language programming
- programming graphics
- dynamic variables
- systems design/analysis
- programming simulations.



Potential linkages of Information Processing with other strands, determined by course emphasis and area of specialization, are identified in this section (see “Information Processing: Connections with Other CTS

Strands”, page H.4, and “Information Processing in Junior High”, page H.5).

Many Information Processing modules can be effectively integrated into other strands. For example:

Communication Technology	supporting layout and design concepts: <ul style="list-style-type: none"> <li>Graphics Tools, Electronic Publishing I - II</li> </ul>
Electro-Technologies	supporting the computer logic systems: <ul style="list-style-type: none"> <li>Programming I – V</li> <li>Programming Applications I – III</li> </ul>
Management and Marketing	supporting layout and design concepts used in promotion and in setting up a retail store <ul style="list-style-type: none"> <li>Graphics Tools, Electronic Publishing I - II</li> <li>Multimedia Authoring I and II</li> </ul> supporting the writing process in communications strategies: <ul style="list-style-type: none"> <li>Keyboarding I-IV</li> <li>Word Processing I - III</li> <li>Correspondence, Reports, Tables/Forms</li> </ul> supporting records management systems: <ul style="list-style-type: none"> <li>Database I and II</li> </ul>

## With Other Secondary Programs

Many Information Processing modules can be effectively integrated into core and complementary courses.

Potential linkages of Information Processing with other core and complementary subject areas across the curriculum are identified in this section (see “Information Processing: Connections Across the Curriculum”, page H.6 and “Information Processing: Math Objective Match”, pages H.7-10).

The following linkages identify broad connections to core programs in junior and senior high.

Language Arts and English Social Studies	supporting the research and writing process: <ul style="list-style-type: none"> <li>• Keyboarding I - V</li> <li>• Word Processing I - III</li> <li>• Graphics Tools, Electronic Publishing I - II</li> </ul>
Math and Science	supporting problem solving and the organizing, analyzing, and presenting of data: <ul style="list-style-type: none"> <li>• Word Processing I - III</li> <li>• Electronic Publishing I - II</li> <li>• Spreadsheet I and II</li> <li>• Database I and II</li> <li>• Information Management Tools</li> <li>• Document Production I and II - integrated</li> <li>• Programming I - V</li> <li>• Programming Application I - III</li> </ul>

## TRANSITIONS

### To the Community/Workplace

The National Occupational Classification (NOC) chart indicates occupations for which Information Processing provides a foundation. High school students could potentially move into:

- 12 occupations requiring a high school education
- 18 occupations that require further education at a college or technical institution (possibly obtaining advanced standing or preferred entrance in the post-secondary program)
- 10 occupations that require further education at the university level (possibly obtaining preferred entrance into a program).

Information from the National Occupational Classification (NOC) regarding occupations in information processing-related areas that can be accessed upon completion of high school is provided in this section (see "Information Processing: Related Occupations", page H.X).

### To Related Post-secondary Programs

An outline of post-secondary institutions in Alberta currently offering programs in information processing-related areas is provided in this section (see "Information Processing: Summary of Related Post-secondary Programs", pages H.12-13).

## LINKAGES - Information Processing: Connections With Other CTS Strands

Information Processing Modules	Other CTS Strands														
	Agriculture	Career Transitions	Communication Technology	Community Health	Construction Technologies	Cosmetology Studies	Design Studies	Energy and Mines	Electron Technologies	Enterprise and Innovation	Fashion Studies	Financial Management	Foods	Fabrication Studies	Forestry
<b>Theme: System Operations</b>															
INF101: Computer Operations															
INF201: Workstations Operations															
INF202: Electronic Bulletin Board Systems															
INF301: Hardware/Software Analysis															
INF302: Local Area Networks															
<b>Theme: Text/Data Input</b>															
INF102: Keyboarding I															
INF203: Keyboarding II															
INF204: Keyboarding III															
INF303: Keyboarding IV															
INF304: Keyboarding V															
INF305: Keyboarding VI															
<b>Theme: Productivity Software</b>															
INF103: Wordprocessing I															
INF104: Graphics Tools															
INF105: Database I															
INF106: Spreadsheet I															
INF205: Word Processing II															
INF206: Electronic Publishing I															
INF207: Database II															
INF208: Spreadsheet II															
INF306: Word Processing III															
INF307: Electronic Publishing II															
INF308: Information Management Tools															
<b>Theme: Applied Processing</b>															
INF209: Correspondence															
INF210: Reports															
INF211: Tables/Forms															
INF212: Document Production I															
INF309: Word Processing Applications															
INF310: Specialization I															
INF311: Specialization II															
INF312: Document Production II															
<b>Theme: Dynamic Environment</b>															
INF107: Hypermedia Tools															
INF213: Multimedia Authoring I															
INF214: Process Control															
INF313: Multimedia Authoring II															
INF314: Expert Systems															
<b>Theme: Programming</b>															
INF108: Programming I															
INF215: Programming II															
INF216: Programming III															
INF217: Programming IV															
INF218: Programming V															
INF315: Programming Application I															
INF316: Programming Application II															
INF317: Programming Application III															

Provides many direct links with competencies in this strand. Students will reinforce, extend and apply a substantial number of knowledge and/or skill components in practical situations.

Provides some links with competencies developed in this strand, usually through the application of related technologies and/or processes.

## LINKAGES — *Information Processing in Junior High*

Course Emphasis	Information Processing Modules	Management & Marketing Modules	Communication Technology Modules	Design Studies Modules
(Theme 1) Design (3 modules)	Computer Operations			The Design Process
	Graphics Tools			

Course Emphasis	Information Processing Modules	Management & Marketing Modules	Communication Technology Modules	Electro-Technologies Modules
(Theme 2) Programming (4 modules)	Computer Operations			Logic Principles
	Programming I			Robotics I

(Theme 3) Written Communications (5 modules)	Computer Operations	Communication Strategies I		
	Keyboarding I	Information Highway I		
	Word Processing I			

Course Emphasis	Information Processing Modules	Management & Marketing Modules	Communication Technologies Modules	Design Studies Modules
(Theme 4) Visual Communication (5 modules)	Graphics Tools		Presentation & Communication I	The Design Process
	Hypermedia Tools		Beginning Animation	



## LINKAGES - *Information Processing: Connections Across the Curriculum*

Across the Curriculum																			
Information Processing Modules	Junior High							Senior High											
	Language Arts	Social Studies	Mathematics	Science	Health & PLS	Physical Education	Fine Arts	English	Social Studies	Mathematics	Science (General)	Biology	Chemistry	Physics	CALM	Physical Education	Fine Arts	Social Sciences	Second Language
<b>Theme: System Operations</b>																			
INF101: Computer Operations																			
INF201: Workstations Operations																			
INF202: Electronic Bulletin Board Systems																			
INF301: Hardware/Software Analysis																			
INF302: Local Area Networks																			
<b>Theme: Text/Data Input</b>																			
INF102: Keyboarding I																			
INF203: Keyboarding II																			
INF204: Keyboarding III																			
INF303: Keyboarding IV																			
INF304: Keyboarding V																			
INF305: Keyboarding VI																			
<b>Theme: Productivity Software</b>																			
INF103: Wordprocessing I																			
INF104: Graphics Tools																			
INF105: Database I																			
INF106: Spreadsheet I																			
INF205: Word Processing II																			
INF206: Electronic Publishing I																			
INF207: Database II																			
INF208: Spreadsheet II																			
INF306: Word Processing III																			
INF307: Electronic Publishing II																			
INF308: Information Management Tools																			
<b>Theme: Applied Processing</b>																			
INF209: Correspondence																			
INF210: Reports																			
INF211: Tables/Forms																			
INF212: Document Production I																			
INF309: Word Processing Applications																			
INF310: Specialization I																			
INF311: Specialization II																			
INF312: Document Production II																			
<b>Theme: Dynamic Environment</b>																			
INF107: Hypermedia Tools																			
INF213: Multimedia Authoring I																			
INF214: Process Control																			
INF313: Multimedia Authoring II																			
INF314: Expert Systems																			
<b>Theme: Programming</b>																			
INF108: Programming I																			
INF215: Programming II																			
INF216: Programming III																			
INF217: Programming IV																			
INF218: Programming V																			
INF315: Programming Application I																			
INF316: Programming Application II																			
INF317: Programming Application III																			

Provides many direct links with course content. Students will reinforce, extend and apply a substantial number of knowledge and/or skill components in practical contexts.

Provides some links with course content, usually through the application of related

## LINKAGES — Information Processing: Math Objective Match

CAREER AND TECHNOLOGY STUDIES		MATH			ACTIVITY
Module	Objective/Concept	Course	Unit	Concept/Skill	
INF104 Data	Formula Use Help functions and references as appropriate	Math 9–10	• Number Systems	Order of operations	
INF106 Workstation use	Organize data, information, resources	Grade 7–8–9	• Data Management	Types of graphing	Construct graphs, bar graphs, line graphs, circle graphs and picture graphs.
FIN108 Computer Software	Describe constants, variables	Math 9–10	• Algebra	Manipulation of formulas	Solving for unknown variables.
INF208 Data Entry (Input)	Demonstrate appropriate key commands to: Open/create files/templates Enter data Number pad values Keyboard-labels/formula Paste, import data Replicate Name files	Math 9	• Algebra	Formula manipulation	Order of operations
INF209 Data Manipulation (Process)	Create/import data, and use formula	Grades 9–10	• Number Systems	Formulas	Order of operations-to create formulas rewriting formulas for various variables.
INF217 Algorithms	Identify/describe the problem List each step required to solve the problem Develop the appropriate logic to achieve the solution Apply structural programming constructs to create a schematic/ flowchart/pseudocode indicating how the solution will be achieved	All grades		Problem Solving	

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LINKAGES — Information Processing: Math Objective Match (continued)

CAREER AND TECHNOLOGY STUDIES		MATH			ACTIVITY
Module	Objective/Concept	Course	Unit	Concept/Skill	
INF217 Algorithms Classes	Identify/describe the problem List each step required to solve the problem Develop the appropriate logic to achieve the solution Apply structured programming constructs to create a schematic/flowchart/pseudocode indicating how the solution will be achieved	All grades		Problem Solving	
INF218 Algorithms	Modify existing algorithm(s) Identify/describe the problem List each step required to solve the problem Develop the appropriate logic to achieve the solution Apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved	All grades		Problem Solving	
INF218 Algorithms Classes	Modify existing algorithm(s) Identify/describe the problem List each step required to solve the problem Develop the appropriate logic to achieve the solution Apply structured programming construct to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved	All grades		Problem Solving	

**LINKAGES — Information Processing: Math Objective Match** (continued)

CAREER AND TECHNOLOGY STUDIES		MATH			ACTIVITY
Module	Objective/Concept	Course	Unit	Concept/Skill	
INF219 Algorithms	Modify existing algorithm(s) Identify/describe the problem List each step required to solve the problem Develop the appropriate logic to achieve the solution Apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved	All grades	•	Problem Solving	Rewriting formulas with a different subject.
INF219 Computer Language Syntax	Calculations/manipulations/decisions Branching/looping/sub-routines/functions	Math 10	• Algebra	Formula Manipulation	
Algorithms Classes	Modify existing algorithm(s) Identify/describe the problem List each step required to solve the problem Develop the appropriate logic/data components required to achieve the solution Develop the appropriate methods of accessing data/methods in derived data types Compare iterative and recursive routines/structures Measure the efficiency of comparable routines/structures Apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved	All grades		Problem Solving	

**LINKAGES — Information Processing: Math Objective Match** (continued)

CAREER AND TECHNOLOGY STUDIES		MATH			ACTIVITY
Module	Objective/Concept	Course	Unit	Concept/Skill	
INF220 Algorithms Classes	Modify existing/develop new algorithms/classes Identify/describe the problem List each step required to solve the problem/list the required components of the data structure Develop the appropriate logic/data components required to achieve the solution Identify generic characteristics of programming languages Identify steps involved in problem solving independent of programming language Apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved	All grades		Problem Solving	
Computer Language Syntax	Calculations/manipulations/decisions Branching/looping/sub-routines/functions	Math 10		Formula Manipulation	
INF315	Modify existing/develop new algorithms/classes Identify/describe the problem List each step required to solve the problem/list the required components of the data structure Develop the appropriate logic/data components required to achieve the solution Identify generic characteristics of programming languages Apply structured programming constructs to modify/create a schematic flowchart/pseudocode indicating how the solution will be achieved.	All grades		Problem solving	

## LINKAGES — INFORMATION PROCESSING: *Related Occupations*

Information for this chart was obtained from the National Occupations Classification (NOC) descriptions.

### Educational Requirements:

D: High School Education

B: College or Vocational Education

C: Apprenticeship

A: University

Occupation Profile	NOC#	D	C	B	A
Administrative Officers	1221	✓		✓	✓
Computer Engineers	2147				✓
Computer Operators	1421	✓		✓	
Computer Programmers	2163			✓	✓
Computer Service Technologist	2242			✓	✓
Computer Systems Analyst	2162			✓	✓
Correspondence, Publication and Related Clerks	1452	✓			
Data Entry Clerks	1422	✓		✓	
Demographer	2161				✓
Desktop Publishing Specialist	1423			✓	✓
Economist	4162				✓
Executive Assistant	1222	✓		✓	
File Clerk	1413	✓			
General Office Clerks	1411	✓		✓	
Health Record Administrator	0114			✓	
Health Record Technician	1413			✓	
Information Systems Consultant	2162				✓
Librarian	5111			✓	✓
Library Clerk	1451	✓			
Library Technician	5211			✓	
Medical Transcriptionist	1244			✓	
Office Machine Technician	2242			✓	
Receptionist	1414	✓			
Secretaries (except Legal and Medical)	1241	✓		✓	
Survey Interviewers and Statistical Clerks	1454	✓			
Typesetter and Related Occupations	1423			✓	
Typist and Word Processor Operators	1412	✓		✓	

	PUBLIC COLLEGES										APPRENTICESHIP TRADE	PRIVATE COLLEGES					TECH. INST.		UNIVERSITIES				VOCATIONAL COLLEGES								
	Alberta College of Art & Design	Fairview College	Grande Prairie Regional College	Grant MacEwan Community College	Keyano College	Lakeland College	Lethbridge Community College	Medicine Hat College	Mount Royal College	Olds College	Red Deer College	Alberta College	Augustana University College	Canadian Union College	Concordia College	King's University College, The	North American Baptist College	Northern Alberta Institute of Technology	Southern Alberta Institute of Technology	Banff Centre	2tB (3y)	BMP hD	BMP hD	University of Alberta	University of Calgary	University of Lethbridge	AVC - Calgary	AVC - Edmonton	AVC - Lac La Biche	AVC - Lesser Slave Lake	
Business/Business Administration and Commerce		CD	CD	C	CD	D	CD	CD	CD	D	CD	D(10 m)	It	B	B2t	B						C	C	C	CD	V					
Business Administration		CD	CD	C	CD	D	CD	CD	CD	D	CD							D	CD										Ch	C	
Management		D	D	CD		D	CD	D2t	D2t	CD	C2t		B					VC	CD	V	B	C	C	CD	V					C	C
Clerical		D	D	CD		D	CD	D2t	D2t	CD	C2t							VC	C		C								C	C	C
Court Reporter											D							D													
Medical-Clerical/Medical Transcription				C	CD	C	C	C		C	CD	VD						C													
Office Admin./Records Management		C	CD	C	CD	C	C	C		C	CD							CD	C												
Secretarial Training		C	CD	C	CD	C	CD	C	C	C	D	VD	C	C	C			VC	CD									C	C	C	C
Word Processing/Data Entry/Microcomputer		C	CD				C	C			D	C	C	C				VC	CD								V	C		V	
Advertising/Media Sales/Public Relations				D			D		D																						
Audio and/or Visual Communications	D(4 y)			D				D(3y) 3t									V		VD				BM								
Cinema, Radio & Television Arts				D			D		D									D	D	V											
Communications Arts/Studies/Journalism Arts		It	CD	CD			D	It	D				V					VD	VD	V			BM	2t							
Printing and Graphic Arts																		VC	VD												
Computer/Microcomputer Accounting		CD	CD	C		C	C	D					It					VC	VC								4w		C		
Computer Applications							D	CD	It				It					VC	V								4w				
Computer Maintenance/Repair																		CD	V												
Computer Management/Management Information Systems				D	D													VC	V		CB	C	CBM								
Computer Programming (Software)		CD	D	D	D	D	D	D			D		It					CD	VCT			C	C								



INFORMATION PROCESSING: Summary of Post-secondary Programs \*

	PUBLIC COLLEGES											APPRENTICESHIP TRADE						PRIVATE COLLEGES						TECH. INST.		UNIVERSITIES				VOCATIONAL COLLEGES			
	Alberta College of Art & Design	Fairview College	Grande Prairie Regional College	Grant MacEwan Community College	Keyano College	Lakeland College	Leibridge Community College	Medicine Hat College	Mount Royal College	Olds College	Red Deer College		Alberta College	Augustana University College	Canadian Union College	Concordia College	King's University College, The	North American Baptist College	Northern Alberta Institute of Technology	Southern Alberta Institute of Technology	Banff Centre	Athabasca University	University of Alberta	University of Calgary	University of Lethbridge	AVC - Calgary	AVC - Edmonton	AVC - Lac La Biche	AVC - Lesser Slave Lake				
Computer/Computing Science			1t			D		2t	CD	2t	1t			B		B1t			VD			C1B	BMP hD	BMP hD	BMP hD	BM							
Computer Marketing & Business Administration																																	
Desktop Publishing																			C	V						4w							
Computer Engineering Technology							CD	D											D	VD			BMP hD										
Electrical/Electronic Engineering Technologies							CD												CD	D													
Telecommunications Engineering Technology																			CD	D													
Medical/Clerical																			CD	VC			C			C							
Library & Information MangementTechnology			2t	D																D			M										
Mathematics/Statistics/Actuarial Science								1t2t	1t		2t			B	1t	B2t						B	BMP hD	BMP hD	BM								

CODES:	B	Bachelor's Degree	D	Diploma (2 years)	w	weeks
	M	Master's Degree	V	Varies	m	months
	Ph.D.	Doctoral Degree	1t	One-year transfer	y	years
	C	Certificate (1 year or less)	2t	Two-year transfer		

\*Information adapted from "It's About Time: To Start Thinking About Your Future", Advanced Education and Career Development, 1995.





# INFORMATION PROCESSING

## SECTION I: LEARNING RESOURCE GUIDE

(INTERIM)

### TABLE OF CONTENTS

This section of the GSI has been designed to provide a list of resources that support student learning. Three different types of resources are identified:

- **Authorized:** Resources authorized by Alberta Education for CTS curriculum; these resources are categorized as basic, support, or teaching
- **Other:** Titles provided as a service to assist local jurisdictions to identify resources that contain potentially useful ideas for teachers. Alberta Education has done a preliminary review of these resources, but further review will be necessary for use in school jurisdictions
- **Additional:** A list of local and provincial sources of information available to teachers, including the community, government agencies, resource centres and organizations.

INTRODUCTION.....	I.1
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# INTRODUCTION

## CTS AND THE RESOURCE-BASED CLASSROOM

Career and Technology Studies (CTS) encourages teachers to establish a resource-based classroom, where a variety of appropriate, up-to-date print and non-print resources are available. Learning resources identified for CTS strands include print, software, interactive videos, manipulatives, student learning guides and tutorials.

The resource-based classroom approach accommodates a variety of instructional strategies and teaching styles, and supports individual or small group planning. It provides students with opportunities to interact with a wide range of information sources in a variety of learning situations. Students in CTS are encouraged to take an active role in managing their own learning. Ready access to a strong resource base enables students to learn to screen and use information appropriately, to solve problems, to meet specific classroom and learning needs, and to develop competency in reading, writing, speaking, listening and viewing.

## PURPOSE AND ORGANIZATION OF THIS DOCUMENT

The purpose of this document is to help teachers identify a variety of resources to meet their needs and those of the students taking the new Information Processing curriculum. It is hoped that this practical guide to resources will help teachers develop a useful, accessible resource centre that will encourage students to become independent, creative thinkers.

This document is organized as follows:

- Authorized Resources:
  - basic learning resources
  - support learning resources
  - teaching resources
- Other Resources
- Additional Sources.

Some resources in the guide have been authorized for use in some or all of the CTS strands, e.g., the 11-video Career and Technology Studies series produced by ACCESS: The Education Station. Full information is provided in the appropriate section of this resource guide.

Each resource in the guide provides bibliographic information, an annotation where appropriate, and a correlation to the Information Processing modules. The distributor code for each entry will facilitate ordering resources. It is recommended that teachers preview all resources before purchasing, or purchase one copy for their reference and additional copies as required.

Distributor Code	Resources		Levels/Mod. No.			1 = Introductory 2 = Intermediate 3 = Advanced  Indicates module number
			1	2	3	
ATEC	Title	Author	101	201	301	
	Bibliographic Information					
	Annotation					

Distributor Code - see Distributor Directory

## HOW TO ORDER

Most authorized resources are available from the Learning Resources Distributing Centre (LRDC) at:

12360 – 142 Street  
Edmonton, AB  
T5L 4X9  
Telephone: (403) 427-2767  
Fax: (403) 422-9750

Please check LRDC for availability of videos.

The section on Additional Sources lists a variety of other places to find information related to this strand. In addition, at the back of this document is a Distributor Directory, which contains the name and address of each publisher/distributor referred to in the resource list. Note that in some cases a resource may be published by one company but distributed through another.

The information contained is as complete and accurate as possible.

## RESOURCE POLICY

For further information on resource policy and definitions, refer to the *Student Learning Resources Policy* and *Teaching Resources Policy* or contact:

Learning Resources Unit  
Curriculum Standards Branch  
Alberta Education  
5<sup>th</sup> Floor, Devonian Building, East Tower  
11160 Jasper Avenue  
Edmonton, AB  
T5K 0L2  
Telephone: (403) 422-4872  
Fax: (403) 422-0576

## AUTHORIZED RESOURCES

### BASIC LEARNING RESOURCES

The following basic learning resources have been authorized by Alberta Education for use in the Information Processing curriculum. A curriculum correlation appears in the right-hand column.

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Computers!.</i> (4<sup>th</sup> edition.) Timothy N. Trainor and Diane Krasnewich. Mitchell McGraw-Hill, 1992.</p> <p>This textbook covers technological progress, computer information systems, using software, word-processing and desktop publishing, electronic spreadsheets, graphics, database management, hardware and communications and information systems.</p>	101		
		103		
		104		
		105		
		106		
LRDC	<p><i>Data Processing Applications.</i> Sheila Dvorchik and Lesley Wasylenki. Copp Clark Longman Ltd., 1988.</p> <p>A collection of realistic, practical activities that promote the use of problem-solving and decision-making skills. It also includes data processing applications. A teacher's manual and software data disks are available.</p>		206	306
			to	307
			212	309
				310
LRDC	<p><i>Intermediate Word Processing Applications: Job-Based Tasks.</i> Lloyd D. Brooks. Paradigm Publishing International, 1992.</p> <p>This generic word-processing resource explains how to organize and produce a variety of business documents. Exercises are presented in a simple to complex format. An instructor's guide is available.</p>		205	306
			206	309
			209	310
			210	
			212	
LRDC	<p><i>Keyboarding: The Bare Essentials.</i> Sandra D. Ubelacker, Melvin R. Delaney and Donna J. Allan. Copp Clark Longman Ltd., 1992.</p> <p>This text uses an alpha-numeric approach to teach the letters and numbers of the keyboard simultaneously. Includes the standard formats of letters, envelopes, memos, displays and reports. A three-page section introduces the 10-key pad.</p>	101	203	
		102	204	
LRDC	<p><i>Mastering Keyboarding Skills.</i> (2<sup>nd</sup> edition.) Sandra D. Ubelacker, Rita M. Guest and Gerald McConaghy. Copp Clark Longman Ltd., 1989.</p> <p>Keyboarding skills are present for alpha-numeric service and the 10-key pad. Formatting presentation includes displays, enumerations, letters, envelopes, forms and tables, reports (footnotes, bibliography entries) for the introductory and some intermediate levels. Instructions are suitable for both typewriter/computer platforms. A teacher's resource is available.</p>	102	203	
		103	204	
			209	
			210	
			211	
			212	



## Basic Learning Resources (Continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<i>Reaches: An Intensive Drill Package.</i> Shirley Elliott and Peggy Reddekopp. School Prints, 1983.  This resource package of black-line masters includes keyboarding drills of various levels. Autobiographies enhance each area as well.	101	203	303
		102	204	304
			209	305
			210	
			211	
LRDC	<i>World of Computers, The: Applications and Principles.</i> (2 <sup>nd</sup> print edition.) Rob Kelley. John Wiley & Sons Canada Ltd., 1992.  Provides a broad spectrum of up-to-date information, concepts and skills essential to the development of computer literacy and computer applications. It concentrates on four major areas of study: computer hardware systems; software applications; computer uses and their impact on society; and computer programming.	101	201	
		103	215	
		to	to	
		108	218	

# Basic Learning Resources (continued)

Distributor Code	Productivity Software/Programming Systems	Levels/Module No.		
		1	2	3
LRDC	<p><i>Apple Works® 5.1: The Works</i> (Apple Version.) Quality Computers, 1994.</p> <p>Appleworks is an integrated software package. Appleworks combines three popular types of programs - Word Processor, Database and Spreadsheet. Appleworks 5.0 requires an enhanced Apple IIe, 256 expansion memory and a 3.5" disk drive. This version supports more efficient recall and management of files, expanded use of macros and improved word processing, data base and spreadsheet functions.</p>	103 105 106		
LRDC	<p><i>Adobe Pagemaker</i> (Windows Version 6.0 and Macintosh Version 6.0.) Adobe Systems (Canada), 1995.</p> <p>Pagemaker gives you the tools and power to create professional publications on the desktop. Create a variety of publications from newsletters and brochures to catalogs and magazines. Good for beginner and advanced user. <b>Windows</b> - System requirements include 486 processor with 8MG of RAM for Windows 95 and 10MB of RAM for Windows 3.1. <b>Mac</b> - System requirements include an Apple MacIntosh computer with a 68030 processor or later with a minimum of 10MB of RAM or Power Mac with 12MB of RAM.</p>		206	307 309
LRDC	<p><i>ClarisWorks</i> (Windows Version 3.0 and Macintosh Version 3.0.) Claris Corporation/Claris Canada Inc., 1994.</p> <p>ClarisWorks is an integrated software package. It includes word processing, spreadsheet and database programs.</p>	103 105 106	205 207 208	
LRDC	<p><i>Microsoft Excel</i> (Windows Version 5.0 and Macintosh Version 5.0.) Microsoft Corporation/Microsoft Canada Inc., 1993/94.</p> <p>Microsoft Excel is a powerful spreadsheet program that also includes Visual Basic and Microsoft Query.</p>	106	208 212	308 309 to 312
LRDC	<p><i>Microsoft Mail</i> (Windows Version.) Microsoft Corporation/Microsoft Canada Inc., 1993.</p> <p>Electronic mail program.</p>		205 209 210 211	306 309 to 312
LRDC	<p><i>Microsoft Office Standard</i> (Windows Version 4.2.) Microsoft Corporation/Microsoft Canada Inc., 1993/94.</p> <p>This Microsoft Office family is the most popular set of programs for Windows. The integrated package includes: Word 6.0, Excel 5.0, MS Mail, and Powerpoint 4.0.</p>	103 to 106	205 206 208 to 211	306 308 309 to 312

## Basic Learning Resources (continued)

Distributor Code	Productivity Software/Programming Systems	Levels/Module No.		
		1	2	3
LRDC	<p><i>Microsoft Powerpoint</i> (Windows Version 4.0.) Microsoft Corporation/ Microsoft Canada Inc., 1993.</p> <p>Presentation graphics program has everything you need to quickly turn your ideas into powerfully convincing presentations.</p>	107	215 to 218	315 to 317
LRDC	<p><i>Microsoft Visual Basic</i> (Professional Edition, Windows Version 3.0.) Microsoft Corporation/Microsoft Canada Inc., 1993.</p> <p>A powerful programming system that combines graphical interface design tools and a proven general purpose programming language.</p>	108	215 to 218	315 to 317
LRDC	<p><i>Microsoft Visual C++</i>. (Windows, Professional Edition Version 1.5 and Windows NT, 32-Bit Edition.) Microsoft Corporation/Microsoft Canada Inc., 1993.</p> <p>The fastest and easiest way to develop great windows application in C++.</p>	108	215 to 218	315 to 317
LRDC	<p><i>Microsoft Word<sup>TM</sup></i>. (Windows Version 2.0, Windows Version 6.0 and MacIntosh/Power MacIntosh Version 6.0.) Microsoft Corporation/Microsoft Canada Inc., 1992/1994.</p> <p>In the Version 6, Word for Windows and Word for the Macintosh share the same file format, features, appearance and documentation. Because this version eliminates most of the differences between Windows and Mac, both products are numbered version 6.0.</p>	103 105 106	205 209 to 212	306 309 to 312
LRDC	<p><i>Microsoft Works for Windows<sup>TM</sup></i>. (Version 2.0E.) Microsoft Corporation/ Microsoft Canada Inc.</p> <p>Works is an integrated software package including word processing, spreadsheet, and database programs.</p>	103 105 106	205 207 to 212	

## SUPPORT LEARNING RESOURCES

The following support learning resources are authorized by Alberta Education to assist in addressing some of the learner expectations of a module or components of modules.

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Award Enterprises: An Information Processing Simulation.</i> Gerald Roussie and Allen Paul. Copp Clark Pitman Ltd./Copp Clark Longman Ltd., 1991.</p> <p>This simulation outlines the amalgamation of two companies that have new hardware and software. A variety of forms on a word processor/data base/spreadsheet are used.</p>		212	310 311 312
LRDC	<p><i>Business Software Applications.</i> E.J. Coburn, et al. Paradigm Publishing International, 1990. Text and Instructor' Data Disk Package: 5.25" (DOS), 1991.</p> <p>This entry-level textbook has hands-on exercises, and guided assignments provide learn-by-doing instructions. Several word-processing documents, spreadsheets and database files are pre prepared for assignment. (Software.) An instructor's manual is available.</p>	101 103 105 106	201 205 206 207 208 212	
LRDC	<p><i>Bying Back.</i> Software Online Support Inc., 1993.</p> <p>Quick reference book to find answers to your computer questions. Provides basic computer information in everyday terms. Detailed table of contents makes for easy reference.</p>	101	201	
ACC	<p><i>Career and Technology Studies: Key Concepts.</i> Edmonton, AB. ACCESS: The Education Station.</p> <p>Series of videos and utilization guides relevant to all CTS strands. Series consists of <i>Anatomy of a Plan, Creativity, Electronic Communication, The Ethics Jungle, Go Figure, Innovation, Making Ethical Decisions, Portfolios, Professionalism, Project Planning, Responsibility</i> and <i>Technical Writing</i>.</p>	all	all	all
LRDC	<p><i>Computer Applications for Business: Step-by-Step Exercises and Applications.</i> Iris Blanc. Dictation Disc Co., 1990.</p> <p>Introduces word processing, database and spreadsheet concepts through sequential practice material.</p>	103 105 106		

## Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Computer Applications in Business.</i> Guy Drolet and Monica Taylor. Copp Clark Pitman Ltd., 1989.</p> <p>Covers the major software tools - word processing, databases and spreadsheets. Features computer applications relating to starting a small business, the daily routine of the computer service bureau, applications that require the use of graphics software. Offers the opportunity to reinforce previously learned concepts. A teacher's edition is available.</p>	103 105 106	212	310
LRDC	<p><i>Data Processing Application: Data Disk</i> (Microsoft Works, DOS Version.) Sheila Dvorchik and Lesley Wasylenki. Copp Clark Longman Ltd., 1988. Courseware.</p> <p>See Basic Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>DDC Database.</i> Iris Blanc and Elinore Hildebrandt. Dictation Disc Co., 1990.</p> <p>Introduces database concepts through exercises and applications designed to develop skills necessary for database manipulation on any software or computer.</p>	105	207 211	
LRDC	<p><i>DDC Spreadsheets: Spreadsheets Skill Building Exercises and Applications.</i> Iris Blanc and Cathy Vento. Dictation Disc Company, 1986.</p> <p>Provides 100 generic developmentally organized operations that incorporate accounting, marketing/ management/ economic and finance activities/ exercise that develop spreadsheet skills. Includes glossary of terms and standard grid planner.</p>	106	208 211	311 312
LRDC	<p><i>Desktop Publishing: Design Basics and Applications.</i> George H.J. Porozny. Copp Clark Pitman Ltd., 1993.</p> <p>Provides general information that can be used with many DTP programs. As students progress through the text, they make a written record of the steps required to complete procedures relating to the program they are using. This record becomes a valuable reference source.</p>		206	307
LRDC	<p><i>Desktop Publishing With WordPerfect 5.1.</i> Lois Larson. Studio Word Processing Ltd. Student Training Manual, 1992.</p> <p>Resource provides the technical terminology/background to understand the typewriter to typesetter to Desktop Publishing transfer plus the WordPerfect Function commands appropriate to achieve layouts using WordPerfect 5.0. A series of exercises are presented complete with instructions that students can replicate. The expected outcome/product is provided.</p>		206	307



## Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<i>Flying Fingers: An Introductory Keyboarding Program Books..</i> (Book I/II, Book III/IV, Book V/VI.) Peggy Reddekopp and Shirley Elliott. School Prints, 1990.  An introductory keyboarding course designed for elementary to junior high. Stresses technique rather than speed. This program provides for skill development through monitoring and positive reinforcement. A teacher manual is available.	101	203	303
		102	204	304
				305
LRDC	<i>How Networks Work.</i> F.J. Derfler, L. Freed. Copp Clark Longman Ltd., Emeryville, CA, 1993.  This book offers original illustrations that graphically unravel the PC network to detail in full color how each component does its magic and how all the pieces fit together.		201	301 302
LRDC	<i>How Software Works.</i> R. White. Cop Clark Longman Ltd., Emeryville, CA, 1993.  How Software Works covers all major categories, including operating systems, database management, spreadsheets, Word processing, graphics, communications and windows.	101	201	301
LRDC	<i>Intermediate Word Processing Applications: Job-based Tasks.</i> (DOS 3.5" Version 1.0.) Lloyd D. Brooks. Paradigm Publishing International, 1992.  Low density disks with student files and the completed files for the instructor. Both ASCII and WordPerfect versions are provided.  See Basic Learning Resources for module correlation.			
LRDC	<i>Intermediate Word Processing Applications: Job-Based Tasks.</i> (DOS 5.25" Version 1.0.) Lloyd D. Brooks, Paradigm Publishing International, 1992.  Low density disks with student files and the completed files for the instructor. Both ASCII and WordPerfect versions are provided.  See Basic Learning Resources for module correlation.			



## Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Introduction to WordPerfect® 5.1.</i> Lois Larson. Studio Word Processing Ltd., 1991. Student Training Manual.</p> <p>Student manual contains software manipulation directions as well as good exercises to help strengthen the learning. Note: The actual formatting procedure for specific tables, reports and letters are not covered and would also have to be taught separately, but the exercises contain examples of all three. A teacher training manual is available.</p>	101 102 103	205	309
LRDC	<p><i>Introduction to WordPerfect® for Windows™.</i> (Version 5.2.) (DOS Keyboard edition.) Lois Larson. Studio Word Processing Ltd., 1993. Student Training Manual.</p> <p>Manual is ideal for those wishing to switch from a DOS version of WordPerfect to a Windows version. Screen prints help to identify the steps in executing the function. Walk-through exercises are provided to facilitate a hands-on experience for student learning.</p>	103	205	309 311 312
LRDC	<p><i>Keyboarding for Personal Computer Use.</i> M. Lily Kretchman. John Wiley &amp; Sons, 1987.</p> <p>An Introductory level textbook for learning alpha-numeric, service keys and the number pad. Sufficient timed writings are available at a variety of suitable intensity levels. Sufficient practice material is available. Formatting for personal letter, an envelope, a personal business letter and essay/report (bibliography and title page) is included.</p>	102 103	203 204 205	
LRDC	<p><i>More Data Processing Applications.</i> Shiela Dvorchick and Lesley Wasylenki. Copp Clark Longman Ltd., 1992.</p> <p>The second textbook in a series of simulations-based books for advanced computer applications. It includes a collection of software application development practice - desktop publishing, graphics, HyperCard, telecommunication, scanning etc., that use problem-solving/decision-making skills and research skills. A teacher's manual is available.</p>		206 to 212	306 307 308 310
LRDC	<p><i>Object-Oriented Programming in Microsoft C++.</i> (1<sup>st</sup> edition.) Robert Lafore. Waite Group Press/Copp Clark Longman Ltd., 1992.</p> <p>This book teaches object-oriented programming with C++ programming language, using Microsoft C/C++. It is suitable for professional programmers, students and kitchen table-enthusiasts.</p>	108	215 to 218	315 316 317

## Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Omega Desktop, Inc.: A Desktop Publishing Simulation.</i> Betty L. Boyce, Mary S. Auvil and Patricia D. Whitman. South-Western Publishing Co., 1991.</p> <p>Hands-on computer applications for advanced applications in which students have already learned how to word process. Activities support a variety of general office activities. A manual is available.</p>	104	206 212	307 309 310
LRDC	<p><i>100+ Desktop Publishing Exercises.</i> Helen Youth. Prentice Hall, 1990. Exercise book, 1995.</p> <p>A generic application workbook supplying exercises to practice layout using either desktop publishing package or advanced word-processing software. Strong emphasis on editing and layout presentation. Quality samples.</p>		206 212	307 309 310
LRDC	<p><i>Paradigm Timed Writings.</i> Jack Salem and Richard Featheringham. Paradigm Publishing Inc., 1992.</p> <p>Provides practice of keying various documents including proofread and handwritten copy in a timed environment.</p>	101 102	203 204	303 304 305
LRDC	<p><i>Pine Tree Resorts: An Office Simulation.</i> Mark Kowalchuk and Carol Lyons. Copp Clark Pitman Ltd., 1986.</p> <p>Handwritten sources offer realistic office situations that enable students to combine thinking skills with keyboarding practice. Includes letters, reports, telephone/ telecommunications, itineraries, records and administrative support functions.</p>	101 102	209 to 212	310
LRDC	<p><i>Producing Business Documents: Integrated Projects and In-Baskets.</i> William M. Mitchell, M. A. Mach and James E. LaBarre. Paradigm Publishing Inc., 1992. Student Practice Set.</p> <p>Provides materials that will help students perfect the skills previously acquired in keyboarding courses. The practice set is designed to enhance previously developed skills and to challenge students to achieve new levels in producing business-related documents. The practice set includes formatting and document preparation of text and graphics, including editing, proofing and revising. Students are encouraged to make use of the hardware and software technology available today. An instructor's guide is available.</p>		212	309 to 312

## Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Programming Applications</i>. Bob Drake. Copp Clark Pitman Ltd., 1988.</p> <p>A collection of application problems designed to provide students with sufficient practice to achieve programming proficiency. A wide variety of topics are sure to interest students. Programming examples include a "What Happens" section, a debugging section and an exercise section. A teacher's manual is available.</p>	108	215 to 218	
LRDC	<p><i>Software Solutions, Inc.: A Practice Set for the Electronic Office</i>. Rosemary T. Fruehling and Constance K. Weaver. Gregg Division, McGraw-Hill Book Co., 1989.</p> <p>A 15- to 20-hour simulation that provides practical experience in performing information processing job tasks. Also includes decision-making and human relations situations frequently encountered by information processing workers in their first office position. An instructor's guide and key are available.</p>		212	309 to 312
LRDC	<p><i>South-Western Introduction to Basic: Quick Course</i>. R. Dill. South-Western Publishing Co., Nelson Canada, 1994.</p> <p>This introduction to BASIC programming emphasizes fundamental concepts, structure, design and coding of BASIC programs. The text can be used in conjunction with books about computer applications. A manual is available.</p>	108	215 216	
LRDC	<p><i>Spreadsheet Applications: Job-Based Tasks</i>. Joseph C. Otto. Paradigm Publishing Inc., 1993. Text with Data Disk.</p> <p>This practice set consists of three units of spreadsheets projects: Unit 1 - managing business and personal information, Unit 2 - interpreting business and personal information, Unit 3 - presenting numeric information. An instructor's guide (with disks) is provided separately giving outcomes to projects.</p>	106	208	
LRDC	<p><i>Step-by-Step Skill Building Exercises for the Word Processor</i>. (2<sup>nd</sup> edition.) Iris Blanc. Dictation Disc Co., 1989.</p> <p>Covers simple to complex word-processing activities that require a variety of word-processing functions and skills.</p>	103	205	306
LRDC	<p><i>Typing Power Drills</i>. (2<sup>nd</sup> Canadian edition.) A.C. Lloyd, et al. McGraw-Hill Ryerson Ltd., 1985.</p> <p>Drill and practice resource for developing speed and accuracy keyboarding skills.</p>	102	203	303 304 305

# Support Learning Resources (Continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Using WordPerfect® 5.1 as a Database.</i> Lois Larson. Studio Word Processing Ltd., 1991. Student Training Manual.</p> <p>Contain basic exercises in a database. It is important to understand WordPerfect prior to doing these manuals. A teacher training manual is available.</p>	105	207	
LRDC	<p><i>Welcome to ... Networking: A Guide to LANs.</i> (A Local Area Networks.) Joseph Levy. MIS Press, 1993.</p> <p>Includes LAN systems, assessing network needs, cabling/topology issues, the operating system, protocols and standards, the best vendor, maintaining the LAN, security and linking applications. A section on electronic imaging is presented.</p>		201	302

## Support Learning Resources (continued)

CCI Training Manuals present software concepts and functions in a step-by-step, read, do and exercise fashion for a specific software package. Level I is training manuals cover introductory level concepts and functions. Level II and III, intermediate and advanced concepts and functions.

Distributor Code	CCI Training Manuals Computer and System Operations	Levels/Module No.		
		1	2	3
LRDC	<i>CorelDRAW®</i> . (Version 4.0.) (Level I.) D. McGarry and L. Scrugham. Computer Consultants International, 1994. Training Manual 3539.	104	206	307
LRDC	<i>Microsoft® Excel® for Windows™</i> . (Version 5.0.) (Level I.) S.F. Wong. Computer Consultants International. Training Manual 2340.	106	208	
LRDC	<i>Microsoft® Excel® for Windows™</i> . (Version 5.0.) (Level II.) S.F. Wong. Computer Consultants International. Training Manual 2341.	106	208	
LRDC	<i>Microsoft® Windows™</i> . (Release 3.X.) S.F. Wong and B. Ling. Computer Consultants International, 1993. Training Manual 1157.	101	201	
LRDC	<i>Microsoft® Word® for Windows™</i> . (Level I.) (Version 6.0.) W. Babkowski. Computer Consultants International, 1994. Training Manual 1760.	103	205	
LRDC	<i>Microsoft® Word® for Windows™</i> . (Level II.) (Version 6.0.) W. Babkowski. Computer Consultants International, 1994. Training Manual 1762.	103	205	
LRDC	<i>Microsoft® Word® for Windows™</i> (Level III.) (Version 6.0.) W. Babkowski. Computer Courseware International, 1994. Training Manual 1764.		205	306
LRDC	<i>WordPerfect® for Windows™</i> . (Level I.) (Version 5.2.) W. Babkowski and L. Scrugham. Computer Consultants International, 1993. Training Manual 1982.	103	205	
LRDC	<i>WordPerfect® for Windows™</i> . (Level II.) (Version 5.2.) W. Babkowski and L. Scrugham. Computer Consultants International, 1993. Training Manual 1983.	103	205	



## Support Learning Resources (continued)

Distributor Code	Productivity Software/Programming Systems	Levels/Module No.		
		1	2	3
LRDC	<p><i>All the Right Type</i>. E. Beaucamp and D. Vincent. Didatech Software, 1992/1994.</p> <p>Keyboarding software program.available in: 3.5"- Apple Version 2.4; 5.25"- Apple Version 2.4; 3.5" - IBM Version 2.5; 5.25" - IBM Version 2.5; Macintosh Version 1.5.2.</p>	101 102	203 204	
LRDC	<p><i>CA-SuperCalc</i> (DOS Release 5.5.) Computer Associates International, 1993.</p> <p>SuperCalc offers powerful and versatile features for spreadsheet management, database analyses and visual presentation.</p>	106	207	
LRDC	<p><i>Canvas</i> (Windows Version 3.5.2 and Macintosh Version 3.5.) Deneba Software, 1993.</p> <p>Canvas is ideally suited for applications such as business graphics, technical illustrations, presentations, graphics design, desktop publishing, engineering and architecture.</p>	104 107	206 213	307 313
LRDC	<p><i>CorelDraw</i> (Windows Version 5.0.) Corel Systems Corporation, 1994.</p> <p>CorelDraw is designed for illustration and graphic design, photo-retouching and bitmap-editing, long and short document publishing, business charting and spreadsheets, presentations, animation and morphing, tracing, OCR and file management.</p>	104 107	206 212	307 313
LRDC	<p><i>Harvard Graphics</i> (Windows Version 3.0.) Software Publishing Corporation, 1994.</p> <p>Multimedia presentations of charts and slides.</p>	107		
LRDC	<p><i>HyperCard</i>. (Macintosh Version 2.2.) Apple Computer, Inc./Claris Canada, 1993.</p> <p>HyperCard lets you develop powerful stand-alone applications for customizing business solutions, education courseware, interactive multimedia presentations, and more.</p>	107		



## Support Learning Resources (Continued)

Distributor Code	Productivity Software/Programming Systems	Levels/Module No.		
		1	2	3
LRDC	<p><i>Microsoft FoxPro: Professional Edition.</i> (Windows Version 2.6 and Macintosh 2.6.) Microsoft Corporation/Microsoft Canada Inc., 1994.</p> <p>This is a relational database used to manage data and information. Tables and reports can be generated. This package is commonly used in the commercial sector.</p>	105	207	308
LRDC	<p><i>Microsoft® Project</i> (Windows™ Version 4.0 and Version 4.0 Macintosh/Power Macintosh.) Microsoft Corporation/Microsoft Canada Inc., 1995</p> <p><b>Windows</b> - Microsoft Project version 4.0 helps create project plans, manage resources, communicate plans and progress to others and manage changes as necessary. It produces a variety of reports (e.g. GANTT charts) and screening options. This version is much easier for beginning users, providing on-line help and cue cards. <b>Macintosh</b> - This software helps students create project plans, communicate them to others, and manage changes as they occur. It can be applied directly in Information Processing Module INF308, Information Management Tools, and can support students learning in all strands.</p>			308
LRDC	<p><i>Microsoft Publisher</i> (Windows Version 2.0.) Microsoft Corporation/Microsoft Canada Inc., 1994.</p> <p>A desktop publishing package that allows students to design documents using various graphics, fonts and pictures.</p>		206	307
LRDC	<p><i>SuperPaint.</i> (MacIntosh Version 3.50.) Aldus Corporation/Adobe Systems Inc., 1993.</p> <p>Combines the features of Macintosh paint, draw and image-processing programs into one powerful, easy-to-use graphics program.</p>	104	206	307
SCI	<p><i>Ultrakey.</i> (Macintosh Version 3.0.) Bytes of Learning Incorporated, SoftChoice Inc., 1990-1994.</p> <p>Ultrakey is a computer-based keyboarding instruction program that uses life-like animation to teach users how to type. Every keyboarding skill is demonstrated. When additional help is needed the program immediately repeats demonstrations. Clear and concise progress reports are generated along with suggestions for improvement and individual reports.</p>	101 102	203 204	303 304 305

## Support Learning Resources (Continued)

Distributor Code	Productivity Software/Programming Systems	Levels/Module No.		
		1	2	3
SCI	<i>Ultrakey with Ultrakey Enhancer: Grade 3 to Adult</i> (Site Lincenced Edition for Windows Version 3.0.) Bytes of Learning Inc., SoftChoice Inc., 1995.	101	203	303
		102	204	304
				305
	UltraKey teaches basic keyboarding by touch. All keys, including keys, commonly used symbol keys, and the numeric keypad (10-key) are learned through the use of this program. To maximize learning, UltraKey, demonstrates every finger action in advance and provides audio feedback as keys are strict. Simple instructions and life-like graphics make UltraKey suitable for most learners, age 8 to adult. This latest version of UltraKey reads aloud all lessons instructions and keyboarding reports, so the program is suitable for even more people than ever.			
LRDC	<i>WordPerfect</i> (DOS Version 6.1, Windows Version 6.1 and Macintosh Version 3.1.) Novell, Inc., WordPerfect Corporation, 1993/94.	102	203	303
		103	to	to
			212	307
	WordPerfect is designed to allow users to write better, work smarter, making transition easier and integrate perfectly. It supports access to other applications and offers file and macro conversions.			309
				to
				312

## TEACHING RESOURCES

The following teaching resources are authorized by Alberta Education to assist teachers in the instructional process.

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Award Enterprises: An Information Processing Simulation.</i> Gerald Roussie and Paul Allen. Copp Clark Pitman Ltd., 1991. Instructor's Manual.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Business Software Applications.</i> E.J. Coburn, et al. Paradigm Publishing International, 1990. Instructor's Manual.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Computer Applications in Business.</i> Guy Drolet and Monica Taylor. Copp Clark Pitman Ltd., 1989. Teacher's Edition.</p> <p>See Basic Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Data Processing Applications.</i> Sheila Dvorchik and Lesley Wasylenki. Copp Clark Pitman Ltd., 1989. Teacher's Manual.</p> <p>See Basic Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Flying Fingers: An Introductory Keyboarding Program.</i> Peggy Reddekopp and Shirley Elliott. School Prints, 1990. Teacher's Manual.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Intermediate Word Processing Applications: Job-Based Tasks.</i> Lloyd D. Brooks. Paradigm Publishing International, 1992. Instructor's Guide.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Introduction to WordPerfect 5.1.</i> Lois Larson. Studio Word Processing Ltd., 1991. Teacher Training Manual.</p> <p>Training manual is for teaching WordPerfect 5.1 to adults or high schools students. It covers concepts that provide information and assignments for the student. The manual for Windows has exercises, but format is somewhat different than the 5.1 manual.</p>	101 102 103	205	309

## Teaching Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Mastering Keyboarding Skills I.</i> (2<sup>nd</sup> edition.) Sandra D. Ubelacker and Rita M. Guest. Copp Clark Pitman Ltd., 1990. Teacher's Resource Book.</p> <p>See Basic Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>More Data Processing Applications.</i> Sheila Dvorchik and Lesley Wasylenki. Copp Clark Pitman Ltd., 1992. Teacher's Manual.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Omega Desktop Inc.: A Desktop Publishing Simulation.</i> Betty L. Boyce, Mary S. Auvil and Patricia D. Whitman. South-Western Publishing Co., 1991. Manual.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Producing Business Documents: Integrated Projects and In-Baskets.</i> William M. Mitchell, K. A. Mach and James E. LaBarre. Paradigm Publishing International, 1992. Instructor's Guide.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Programming Applications.</i> Bob Drake. Copp Clarke Pitman Ltd., 1989. Teacher's Manual.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Software Solutions, Inc.: A Practice Set for the Electronic Office.</i> Rosemary T. Fruehling and Constance K. Weaver. Gregg Division, McGraw-Hill Book Co., 1989. Instructor's Manual and Key.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>South-Western Introduction to Basic: Quick Course.</i> R. Ruth. South-Western Publishing Co., Nelson Canada, 1994. Manual.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			

## Teaching Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	<p><i>Spreadsheet Applications: Job-Based Tasks</i>. Joseph C. Otto. Paradigm Publishing Inc. Instructor's Guide/Disks.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>Using WordPerfect 5.1 as a Database</i>. Lois Larson. Studio Word Processing Ltd., 1992. Teacher Training Manual.</p> <p>See Support Learning Resources for annotation and module correlation.</p>			
LRDC	<p><i>World of Computers, The: Applications and Principles</i>. (2<sup>nd</sup> print edition.) Rob Kelley. John Wiley &amp; Sons Canada Ltd., 1992. Teacher's Guide.</p> <p>See Basic Learning Resources for annotation and module correlation.</p>			

## INFORMATION PROCESSING RESOURCES

[illegible]



# INFORMATION PROCESSING RESOURCES

THEME CODE:			D - Applied Processing			DYNAMIC CODE:			STATUS CODE:			O - Other			LEVEL CODE:			JUNIOR/SENIOR HIGH CODE:																													
A - System Operations			E - Dynamic Environment			P - Print			B - Basic			S - Support			I - Introductory			J - Junior High																													
B - Text/Data Input			F - Productivity Software			V - Video			T - Textile			S - Support			2 - Intermediate			S - Senior High																													
C - Productivity Software			F - Productivity Software			S - Software			T - Textile			T - Textile			3 - Advanced																																
LEVEL	THEME	Format	Status	101	102	103	104	105	106	107	108	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	
MODULE NO	Flying Fingers - An Introductory Keyboarding Program Book I/II	P	S	X	X	X								X	X																																
	Book III/IV	P	S	X	X	X								X	X																																
	Book V/VI	P	S	X	X	X								X	X																																
	Teacher's Manual	P	T	X	X	X								X																																	
	How Networks Work	P	S	S							X																																				
	How Software Works	P	S	S																																											
	Intermediate Word Processing Application: Job-Based Tasks - Text	P	B	S													X	X																													
	Ver. 1 -DOS Disks (3.5" & 5.25")	P	S	S																																											
	Instructor's Guide	P	T	S																																											
	Introduction to WordPerfect 5.1	P	S														X																														
Student Manual	P	S	J/S																																												
Student Training Manual	P	S	J/S																																												
Teacher's Manual	P	T	J/S																																												
Keyboarding for Personal Computer Use (Hardcover Alberta Edition)	P	B	J/S	X	X											X																															
Keyboarding: The Bare Essentials	P	B	J/S	X	X									X																																	
Mastering Keyboarding Skills I, (2nd Edition) - Text	P	B	S	X	X									X	X																																
Teacher's Resource Book	P	T	S																																												

## INFORMATION PROCESSING RESOURCES

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## INFORMATION PROCESSING RESOURCES

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# INFORMATION PROCESSING RESOURCES

THEME CODE:			FORMAT CODE:			STATUS CODE:			LEVEL CODE:			JUNIOR/SENIOR HIGH CODE:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
A - System Operations			D - Applied Processing			p - Print			B - Basic			1 - Introductory			J - Junior High																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
B - Text/Data Input			E - Dynamic Environment			v - Video			S - Support			2 - Intermediate			S - Senior High																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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## ADDITIONAL SOURCES

Available to Information Processing teachers, both locally and provincially, are many sources of information that can be used to enhance Career and Technology Studies. These sources are available through the community, government agencies, resource centres and organizations. Some of these sources, e.g., government departments, undergo frequent name and/or telephone number changes. Please consult your telephone directory or an appropriate government directory.

The following is a partial list of sources in the community to consider:

### TEACHER-LIBRARIANS

Planned and purposeful use of library resources helps students grow in their ability to gather, process and share information. Research activities require access to an adequate quantity and variety of appropriate, up-to-date print and non-print resources from the school library, other libraries, the community and additional sources. Some techniques to consider are:

- planning together
- establishing specific objectives
- integrating research skills into planning.

Cooperation between the teacher-librarian and the subject area teacher in the development of effectively planned resource-based research activities ensures that students are taught the research skills as well as the subject content.

Also see *Focus on Research: A Guide to Developing Student's Research Skills* referenced in the Alberta Education Sources section.

### ALBERTA EDUCATION SOURCES

The following monographs are available for purchase from:

Learning Resources Distributing Centre  
12360 – 142 Street  
Edmonton, AB  
T5L 4X9  
Telephone: 427-2767  
Fax: 422-9750

Please consult the "Support Documents" section or the "Legal, Service and Information Publications" section in the *Buyers Guide* for ordering information and costs.

### Developmental Framework Documents

- *The Emerging Student: Relationships Among the Cognitive, Social and Physical Domains of Development*, 1991

This document looks at the whole child, or student, as a productive learner, integrating all the domains of development: cognitive, social and physical. It emphasizes the need for providing balanced curriculum and instruction.

- *Students' Interactions Developmental Framework: The Social Sphere*, 1988

This document focuses on the student as a social being. It looks at the student's affective or emotional growth and examines moral development. These three domains make up the social sphere.

- *Students' Physical Growth: Developmental Framework Physical Dimension*, 1988

This document examines children's normal physical growth in three areas: perceptual, structural and motor development. In none of these areas is the child's growth in a single continuous curve throughout the first two decades of life. Physical growth is characterized by periods of rapid growth and periods of slower growth. Consequently, differences and changes in growth patterns may affect the timing of certain learning processes.



*Students' Thinking: Developmental Framework Cognitive Domain, 1987*

This document explores children's cognitive development from infancy to adolescence. The Piagetian stages of pre-operational, concrete operational and formal operational thinking are explained. Suggestions for improving the learning process are also presented.

## Others

- *Focus on Research: A Guide to Developing Students' Research Skills, 1990*

This document outlines a resource-based research model that helps students manage information efficiently and effectively, and in this process, to gain skills that are transferable to all school and work situations. This model provides a developmental approach to teaching students how to do research.

- *Teaching Thinking: Enhancing Learning, 1990*

Principles and guidelines for cultivating thinking, ECS to Grade 12, have been developed in this resource. It offers a definition of thinking, describes nine basic principles on which the suggested practices are based, and discusses possible procedures for implementation in schools and classrooms.

## OTHER GOVERNMENT SOURCES

### ACCESS: The Education Station

ACCESS: The Education Station offers a variety of resource and services to teachers. For a nominal dubbing and tape fee, teachers may have ACCESS: The Education Station audio and video library tapes copied.

ACCESS: The Education Station publishes a listing of audio and video cassettes as well as a comprehensive programming schedule.

Of particular interest are the Career and Technology Studies videos that are available with utilization guides. The guides outline key points in each video and suggest questions for discussion, classroom projects and other activities. Video topics are listed in the Support Learning Resources Section of this Guide. The videos listed and accompanying support material can be obtained from:

ACCESS: The Education Station  
3720 - 76 Avenue  
Edmonton, AB  
T5B 2N6  
Telephone: 440-7777 (in Edmonton)  
1-800-352-8293  
(outside Edmonton)

### National Film Board of Canada (NFB)

The NFB has numerous films and videotapes that may be suitable for Information Processing.

For a listing of NFB films and videotapes indexed by title, subject and director, or for rental or purchase of NFB films, call 1-800-267-7710 (toll-free).

Educational Marketing Officers in Calgary and Edmonton are available, province wide, for workshops, conferences, professional development days and similar activities.

For northern Alberta and the Northwest Territories, the Educational Marketing Officer can be reached at 495-3012 (fax, 495-6412).

For southern Alberta, contact the Educational Marketing Officer at 292-5411 (fax, 292-5458).

ACCESS: The Education Station and some school boards have acquired duplication rights to some NFB videotapes. Please consult the relevant catalogues in your school or school district.

The Calgary Public Library has a selection of NFB films and videotapes that can be borrowed free of charge with a Calgary Public Library borrower's card. For further information, contact:

Calgary Public Library  
Films and Recordings Department  
616 Macleod Trail SE  
Calgary, AB T2G 2M2  
Telephone: 260-2781

## Resource Centres

### *Urban Resource Centres*

Calgary Board of Education  
Supervisor, Education Media  
3610 - 9 Street SE  
Calgary, AB  
Telephone: 294-8540  
Fax: 287-9739

Calgary Separate School Board  
Supervisor, Instructional Materials  
1000 - 5 Avenue SW  
Calgary, AB  
T2P 4T9  
Telephone: 246-6663  
Fax: 249-3054

County of Strathcona  
Director, Learning Resource Service  
2001 Sherwood Drive  
Sherwood Park, AB  
T8A 3W7

Edmonton Public School Board  
Learning Resource Consultant  
Centre for Education  
One Kingsway Avenue  
Edmonton, AB  
T5H 4G9  
Telephone: 429-8320  
Fax: 429-8313

Lakeland School District No. 5460  
Area Superintendent  
Postal Bag 1001  
6005 - 50 Avenue  
Bonnyville, AB  
T9N 2L4  
Telephone: 826-3145  
Fax: 826-4600

Medicine Hat School District No. 75  
IMC Manager  
601-1 Avenue SW  
Medicine Hat, AB  
T1A 4Y7  
Telephone: 526-1323  
Fax: 529-5339

Red Deer Public School Board  
Coordinator of Instruction  
4747 - 53 Street  
Red Deer, AB  
T4N 2E6  
Telephone: 343-1405  
Fax: 347-8190

St. Anthony's Teacher Centre  
Supervisor, Curricular Resources  
10425 - 84 Avenue  
Edmonton, AB  
T6E 2H3  
Telephone: 439-7356  
Fax: 433-0181

### *Regional Resource Centres*

#### Zone 1

Zone 1 Regional Resource Centre  
Film Supervisor  
10020 - 101 Street  
P.O. Box 6536  
Peace River, AB  
T8S 1S3  
Telephone: 624-3187  
Fax: 624-5941

#### Zones II and III

Central Alberta Media Services (CAMS)  
Film Supervisor  
182 Sioux Road  
Sherwood Park, AB  
T8A 3K5  
Telephone: 464-5540  
Fax: 467-5469

#### Zone IV

Alberta Central Regional Education Services  
(ACRES)  
Operations Manager  
County of Lacombe  
Parkland Regional Library Building  
56 Avenue and 53 Street Corner  
Box 3220  
Lacombe, AB  
T0C 1S0  
Telephone: 782-5720  
Fax: 782-5831

#### Zone V

South Central Alberta Resource Centre  
(SCARC)  
c/o County of Wheatland  
435 B Hwy #1  
Strathmore, AB  
T1P 1J4  
Telephone: 934-5028  
Fax: 934-4889

#### Zone VI

Southern Alberta Learning Resource Centre  
(SALRC)  
Film Supervisor  
Provincial Government Administration  
Building  
120, 909 Third Avenue N  
Box 845  
Lethbridge, AB  
T1J 3Z8  
Telephone: 320-7807  
Fax: 320-7817

## DISTRIBUTOR DIRECTORY

The entries in the distributor directory are arranged alphabetically by code.

Code	Distributor/Address	Telephone/Fax
ACC	ACCESS: The Education Station 3720 – 76 Avenue Edmonton, AB T6B 2N9	(403) 440-7777 Fax: 440-8899 1-800-352-8293
LRDC	Learning Resources Distributing Centre 12360 – 142 Street Edmonton, AB T5L 4X9	(403) 427-2767 Fax: 422-9750



# INFORMATION PROCESSING

## SECTION J: SAMPLE STUDENT LEARNING GUIDES

(INTERIM)

### TABLE OF CONTENTS

A student learning guide presents information and direction to help students attain the expectations defined in a specified CTS module. It is designed to be used by students under the direction of a teacher.

The student learning guides included in this section are organized as follows:

- Why take this module?
- What do you need to know before you start?
- What will you know and be able to do when you finish?
- When should your work be done?
- How will your mark for this module be determined?
- Which resources may you use?
- Activities/Worksheets

A student learning guide is not a self-contained learning package (e.g., Distance Learning Module), such as you might receive from the Alberta Distance Learning Centre (ADLC) or Distance Learning Options South (DLOS).

#### SAMPLE STUDENT LEARNING GUIDES

Keyboarding I (INF102) ..... J.1

Word Processing I (INF103)..... J.9





## **INFORMATION PROCESSING**

### **Keyboarding I (INF102)**

#### **TAKE THIS MODULE?**

- Keyboarding skills provide you with the licence and ability to travel the “high-tech information highway” with speed and accuracy!
- Use your keyboarding skills to make written assignments (in school, university, college or on the job) easier to do, and to earn higher marks for work that is neatly and accurately prepared and printed.
- The ability to touch keyboard quickly and accurately will enhance your daily living skills and may open doors to many different career opportunities for you.
- Increase your efficiency in using the workstation equipment and resources.
- Improve your ability in basic competencies including managing your learning and resources, communicating effectively and demonstrating responsibility.

#### **DO YOU NEED TO KNOW BEFORE YOU START?**

This module requires that you can demonstrate the exit-level competencies defined in the following module from the Information Processing strand:

- **INF101**      Computer Operations

### WILL YOU KNOW AND BE ABLE TO DO WHEN YOU FINISH?

*When you complete this module, you will be able to:*

- enter alphabetic text and basic punctuation (.,:;?) at a minimum of 20 words per minute
- enter numbers on the numeric keypad at a minimum of 80 keystrokes per minute
- do the above using the appropriate fingering, posture and eye focus
- manage your workstation in an acceptable manner
- demonstrate basic competencies.

### SHOULD YOUR WORK BE DONE?

Use the timelines shown below to help you schedule your time. Prepare a workplan outlining when you will complete the tasks listed below. Submit this workplan to your teacher for approval. Remember, you should use your time and resources as efficiently as possible so that you can complete the module and move onto other opportunities to develop your skills and abilities. You may find that you need less time or more time than is indicated. If you need to adjust your workplan, be sure to consult your teacher.

TASK 1: 15 hours (alphabet and build speed & accuracy)

TASK 2: 5 hours (keypad numbers)

TASK 3: 5 hours (punctuation (.,:;?))

## INFORMATION PROCESSING

### Keyboarding I (INF102)

#### WILL YOUR MARK FOR THIS MODULE BE DETERMINED?

	PERCENTAGE
<p>You must first demonstrate <b>all</b> of the competencies required for this module.</p> <p>When you have done this, your percentage mark for the module will be determined as follows:</p>	
<ul style="list-style-type: none"><li>TASK 1-3: ASSIGNMENTS - drills for developing speed and accuracy on alphabetic, punctuation and numeric keys</li></ul>	30%
<ul style="list-style-type: none"><li>TASKS 1 &amp; 3: TEST -- enter alphabetic text and basic punctuation keys (.,:;?) at a minimum of 20 words per minute in three timed attempts from straight-copy material with a maximum of 1 uncorrected error. (<i>see Reference Chart: Keyboarding and Numberpad Rates</i>)</li></ul>	20%
<ul style="list-style-type: none"><li>TASK 2: TEST -- enter numbers on the numeric keypad at a minimum of 80 keystrokes per minute in three timed attempts from straight-copy material of 1 to 3 digit numbers, with a maximum of 1 uncorrected error. (<i>see Reference Chart: Keyboarding and Numberpad Rates</i>)</li></ul>	10%
<ul style="list-style-type: none"><li>Consistently demonstrate appropriate fingering, posture and eye focus. Teacher will observe your technique during timings and drills. (<i>see Assessment Checklist: Text-Data Entry for standard</i>)</li></ul>	30%
<ul style="list-style-type: none"><li>Consistently demonstrate appropriate workstation routines. (<i>see Workstation Routines and Management for standard</i>)</li></ul>	10%
<ul style="list-style-type: none"><li>Demonstrate effort to manage your learning and resources, communicate effectively and demonstrate responsibility</li></ul>	<i>basic competency reference guide</i>

### RESOURCES MAY YOU USE?

- Text: Ubelacker, Guest and McConaghy, *Mastering Keyboarding Skills 1*, 2nd Edition. Toronto: Copp Clark Pitman Ltd., 1989.
- Software: Type! Broderbund Software, Inc. 1989.
- Drill book: Lloyd, Winger, *Typing Power Drills*. McGraw-Hill Ryerson Limited, Toronto 1985.

### BACKGROUND

#### WORKSTATIONS

With the assistance of your teacher, become familiar with all aspects of your workstation so that you will be comfortable starting up, working on and closing down programs and equipment at the end of each learning session.

Some things you will need to know:

- are you using a networked or stand-alone computer system?
- how do you turn on your equipment?
- how do you log in to the system?
- what programs will you be using?
- how do you load, use, exit or quit the programs you will be using?

Once you are familiar with and comfortable with the “mechanics” of your workstation, you will be ready to roll.

#### RESPONSIBILITY:

Remember, it is your responsibility to keep your station tidy, books in place and equipment properly turned off at the end of your session. It is also your responsibility to accurately complete all assignments within the time frame.

## INFORMATION PROCESSING

### Keyboarding I (INF102)

#### SOFTWARE INFORMATION/INSTRUCTIONS

Attached to this student guide is a learning package with instructions for using the selected software tutorial package (TYPE! by Broderbund) to learn the alphabetic keyboard (A through Z) and to apply correct keyboarding techniques and skills in order to achieve 20 words per minute.

Also included are instructions for using the specified word-processing software package (WordPerfect 5.1 for DOS), to learn, review and reinforce the alphabetic keyboard (A through Z); and basic punctuation (.,:;?); and numbers using the keypad.

#### TASK 1: USE TYPE! TO LEARN THE ALPHABETIC KEYBOARD (A through Z)

GOAL -- ability to accurately key in alphabetic letters (A-Z) at a minimum of 20 words per minute.

Read the material in the TYPE! information sheets included in this package. (Information Sheet No. 1.) These sheets will help you get started using the TYPE! program. If you have any questions, discuss them with your teacher before starting the program. Complete the drills and exercises in the TYPE! on-line tutorial.

Continue to work on the TYPE! Build Speed and Accuracy and Special Exercises until you have achieved your goals of mastery of the alphabet keys at 20 wpm.

#### TASK 2: USE WORDPERFECT 5.1 FOR DOS TO LEARN NUMBERS FROM THE KEYPAD

GOAL -- ability to accurately key in numbers 1–9 at a minimum of 80 keystrokes per minute.

(Note: The TYPE! program teaches numbers from the top row of the keyboard, and teaches them in conjunction with punctuation and alphabetic letters, so you will switch to WordPerfect to drill on keypad numbers.)

Read the material in the WORDPERFECT information sheets included in this package. These sheets give an overview of the WordPerfect function keys you will be using for this module. If you have any questions, discuss them with your instructor before starting the program.

EXERCISES Text: *Mastering Keyboarding Skills I* (2nd Edition), pages 332–333

Read and follow the instructions in the textbook. Repeat the exercises until you have achieved a rate of 80 keystrokes per minute.

Additional Practice exercises:

Text: *Typing Power Drills*, page 29, drill #57; page 33, drill #62, page 34, drill #64. (Additional practice may be found in business calculation texts.)

**You must take 3 - 1 minute timings over no more than 5 class periods to demonstrate touch keyboarding competency of 80 keystrokes a minute with no more than 1 error. Let your teacher know when you are ready for this keyboarding assessment.**



# INFORMATION PROCESSING

## Keyboarding I (INF102)

### TASK 3: PUNCTUATION (.,:;?) Using WORDPERFECT for DOS 5.1

EXERCISES Text: *Mastering Keyboarding Skills I* (2nd Edition)

Semicolon	Lesson 1, page 6
Comma	Lesson 5, page 14
Period	Lesson 6, page 16
Colon	Lesson 18, page 42
Question Mark	Lesson 18, page 42

Text: *Typing Power Drills*

Semicolon	drill 78, page 46
Colon	drill 79, page 46
Question Mark	drill 84, page 47

# INFORMATION PROCESSING

## Keyboarding I (INF102)

### INFORMATION SHEET #1

#### USING TYPE!

Start up your computer and log into your system.

#### STOP!

You will require a FORMATTED DATA DISK on which to store your results. If you do not already have a formatted disk, prepare one now.

Insert your formatted data disk in the appropriate drive, then select the TYPE! program from your main menu.

- Press ENTER to go to the TYPE! Main Menu
- With the cursor located by the first item in the main menu, Introduction to the Keyboard, press ENTER again. Take the time to look over the different parts of the screen, and notice that your instructions appear at the bottom of the screen. Work through Introduction to the Keyboard; this should not take longer than 10 minutes. When you are finished the introduction to the keyboard, you will be returned to the TYPE! main menu.

NB: If you forget which fingers belong to which keys, refer to the keyboard/fingering chart included in this package.

NB: Be sure that your CAPS LOCK is OFF! If you get arrows under the letters as you type them it may be because you have your caps lock on. These arrows also indicate keystroke errors. You cannot correct as you type, but if you really mess up, you can press ESC to stop the exercise.

- With the TYPE! Main Menu showing on your screen, move the cursor down next to the words Keyboard Basics, and press ENTER to select the exercises for the letters of the alphabet.
- Take a minute to become familiar with the information on your screen.

The top left portion of the screen shows a "keyboard". As you type, the letters that you type will appear on this keyboard. The program will track your progress, and as you achieve your goals it will automatically introduce additional letters, until you have covered all of the alphabet keys to the level of 20 words per minute.

The top right portion of the screen will keep track of your speed and accuracy GOALS as well as your ACTUAL speed and accuracy. It will also let you know which letters you type incorrectly—and keeps track of your "weak" letters.

At the bottom of the screen you will see the words CURRENT LESSON. Also displayed are all the letters of the alphabet.

## INFORMATION PROCESSING

### Keyboarding I (INF102)

START YOUR DRILLS with the cursor under the letter A, by pressing ENTER. Continue to work on Keyboard Basics each day until you have achieved a speed of 20 words per minute for all of the letters of the alphabet. **You must take 3 - 1 minute timings over no more than 5 class periods to demonstrate touch keyboarding competency of 20 words a minute with no more than 1 error. Let your teacher know when you are ready for this keyboarding assessment.**

There will be several sets of exercises. As you complete each practice line, the results display in the top right corner of your screen. When you have completed a set of exercises, check your overall results.

You may get a **Recommended Exercise:** message. If this message appears, check the menu at the bottom of your screen. You can choose to continue with your current lesson by pressing ENTER, or go to the recommended exercise by moving the cursor to the words "recommended exercise" and pressing ENTER.

If you want to see a breakdown of your results at the end of a training session, select **Display Graphs** from the menu at the bottom of the screen. Read each graph screen carefully, they are self-explanatory!

There are graphs for **results by letter group; results for each finger; alphabet; numbers and symbols; and an error analysis.** You can move from graph to graph by pressing ENTER. Once you have worked your way through the graphs, press ESC (escape on your keyboard) to exit the graphs windows.

AT ANY TIME YOU WANT TO GO BACK TO THE TYPE! MAIN MENU, PRESS ESC.

To QUIT the TYPE! program, press ESC to go the TYPE! Main Menu, then press Q (for Quit) and Y (for yes). This will return you to your station main menu.

## **INFORMATION PROCESSING**

### **Word Processing I (INF103)**

## **TAKE THIS MODULE?**

Word-processing software is used by people in all professions to create documents, and to communicate and transmit information all over the world using networked computer systems.

In this module you will:

- learn the basic commands and functions of a word-processing system (WordPerfect 6.0 for DOS).
- create simple reports, letters and tables for yourself; you will not have to rely on others .
- increase your efficiency in using the workstation equipment and resources.
- improve your ability in basic competencies including managing your learning and resources, communicating effectively and demonstrating responsibility.

These skills will be useful in your personal life as well as in other courses you are taking in school.

## **DO YOU NEED TO KNOW BEFORE YOU START?**

This module requires that you can demonstrate the exit-level competencies defined in the following modules from the Information Processing strand:

<b>INF101</b>	<b>Computer Operations</b>
<b>INF102</b>	<b>Keyboarding I is recommended, you may work on this module at the same time as Word Processing I).</b>

### WILL YOU KNOW AND BE ABLE TO DO WHEN YOU FINISH?

*When you complete this module you will be able to:*

- manage your workstation efficiently, including:
  - start the computer and load the program
  - identify the parts of the screen
  - use the mouse and keyboard to make selections.
- demonstrate the ability to use the basic function key features of WordPerfect 6.0 for DOS, as follows:
  - create and edit documents
  - save, open and close documents
  - use the help feature
  - efficiently move within a document
  - apply text formatting, set margins, adjust linespacing, indent paragraphs
  - add automatic page numbering
  - insert page breaks, hard spaces and hard hyphens
  - prevent widows and orphans
  - use the bold, italics and underline features
  - set and adjust tabular columns
  - block, cut, copy and move text
  - undelete text
  - work with the Reveal Codes function
  - use different document formatting methods
  - proofread, use Spell Check, Thesaurus and Grammatik features
  - use search and replace features to search for and replace text and codes
  - use Zoom and Print Preview
  - print documents
  - understand file management and conventions
  - use the file manager feature to manage files
  - create quicklists.
- create accurate, well-formatted letter, reports and tables
- demonstrate basic competencies

## INFORMATION PROCESSING

### Word Processing I (INF103)

## SHOULD YOUR WORK BE DONE?

Use the timelines shown below to help you schedule your time. Prepare a workplan outlining when you will complete the tasks listed below. Submit this workplan to your instructor for approval. Remember, you should use your time and resources as efficiently as possible so that you can complete the module and move onto other opportunities to develop your skills and abilities. You may find that you need less time or more time than is indicated. If you need to adjust your workplan, be sure to consult your teacher.

TASK 1: approximately 16 hours

TASK 2: approximately 9 hours

## WILL YOUR MARK FOR THIS MODULE BE DETERMINED?

	PERCENTAGE
<p>You must first demonstrate <b>all</b> of the competencies required for this module.</p> <p>When you have done this, your percentage mark for the module will be determined as follows:</p> <p>TASK 1: WordPerfect 6.0 DOS functions -Teacher will review Disk/Printout, work will be approved/not approved.</p> <p>TASK 2: production of accurate and well-formatted</p> <ul style="list-style-type: none"><li>• letters</li><li>• reports</li><li>• tables</li></ul> <p>focusing on personal use and demonstrating the use of the software functions learned in task 1. (see assessment checklist: <i>Word Processing for standard</i>)</p> <ul style="list-style-type: none"><li>• consistently demonstrate appropriate workstation routines (see <i>Workstation Routine and Management Checklist for standard at introductory level</i>)</li><li>• demonstrate effort to manage your learning and resources, communicate effectively and demonstrate responsibility</li></ul>	<p>30</p> <p>20</p> <p>20</p> <p>20</p> <p>10</p> <p><i>basic competency reference chart</i></p>



### RESOURCES MAY YOU USE?

- WordPerfect 6.0 for DOS software.
- Mastertrax, The Learning Advantage, *WordPerfect for DOS Version 6.0, Manual Level 1, 1870* (CCI Computer Courseware International).
- Ubelacker, Guest and McConaghy, *Mastering Keyboarding Skills 1* (second edition.)
- Work assigned in other courses
- Handouts provided with this student guide.

**TASK 1:** Obtain the CCI *WordPerfect for DOS Version 6.0 Manual 1870* textbook. The textbook has a prepared data disk with documents that you will retrieve and work on when performing the exercises. With the assistance of your instructor, determine where these documents are located, and whether you will be copying them to your own prepared data disk, or using them from the fileserver. Be sure to save the revised documents to your own formatted data disk.

**Complete all of the exercises in the manual, saving your work, hand in to your teacher.**

**TASK 2:** Additional information and worksheets are provided to develop skills in preparation of reports, letters and two-column tables. Complete all of the tasks outlined on the worksheets, referring to the textbook, Ubelacker, Guest and McConaghy *Mastering Keyboard Skills 1* (2nd Edition) **or** produce documents for your own personal use by integrating the work from other courses in completing this task. (see information sheets for suggested formatting instructions).

**Put together a collection of your work to be assessed including accurate and well-formatted letters, reports and tables that demonstrate the use of basic software functions.**

**Ongoing** **Assessment of workstation:** you will be observed during the learning period regarding workstation routines and management.

## *APPLICATION EXERCISES*

*REPORTS*

*LETTERS*

*TABLES*







**NB:** Read and follow the formatting instructions included with each set of instructions very carefully. Refer to the examples included in this package.

## PRODUCTION EXERCISES -- REPORTS

**TEXT:** Mastering Keyboarding Skills 1, Ubelacker, Guest & McConaghy

**NB: SPELL CHECK AND PROOFREAD EVERY DOCUMENT BEFORE SAVING**

PAGE(S)	PROD. NO.	INSTRUCTIONS
250-251		<p><b>REPORT</b></p> <p>Ubelacker text, Page 246 -- SUMMARY OF EDITORS' MARKS (Proofreaders' Marks), read and refer to these editing marks whenever necessary.</p> <p><b>FORMATTING GUIDE for REPORTS</b> - read and refer to the formatting instructions that follow in this manual and use these formatting guidelines for all reports.</p> <p><u>Line Length</u>: Use the default settings (60 space line, Left and Right Margins 10).</p> <p><u>Header</u>: Create a <b>HEADER</b> for each report that has the title of the report flush left and the pages automatically numbered flush right. Suppress the Header for the first page only.</p> <p>Place the <b>CURSOR AT THE TOP OF THE FIRST PAGE</b> then:            Press Shift+F8, P, H, A, P, this will bring up the <b>HEADER</b> editing screen; Type the name of the report at the left margin, then press Alt+F6 to place the cursor at the right margin and type the word <b>Page</b> leave one spacebar space, then hold down the <b>Ctrl</b> key and press the letter <b>B</b>, this will automatically number the pages starting with page one, then press <b>Enter</b> once to insert an extra blank line.</p> <p>Press <b>F7</b> once, this will bring back the formatting menu, then type <b>u</b> for suppress (this page only); and then press <b>1</b> to suppress all headers, footers and page numbering for this page one. (The header is only visible in <b>PRINT</b> and <b>VIEW</b>) and the code cose code is visible in reveal codes (F11).</p>

250-251 cont'd		<p> Type the <b>TITLE</b> of the report in ALL CAPITAL LETTERS on <b>Ln 7</b> on the first page by pressing <b>Enter</b> 6 times (this places your title on the first page of a report on line 13 or 2" from the top edge of the page)</p> <p> <b>Triple Space</b> (enter 3 times) after the title.</p> <p> Set for <b>Double Spacing</b> for the body of the report (Shift+F8, L, S, 2, F7)</p> <p> Use <b>AUTOWRAP</b> at the ends of the lines in the body of the report, do not press enter unless you are starting a new paragraph. <b>TAB</b> in once to have the first line of each new paragraph start 5 spaces in from the left margin.</p> <p> Pages will break automatically as they fill, page breaks show on the monitor as a single line of dashes. Start each new page on <b>Ln 1</b>, right below the soft page break line of dashes. This places your text 1" from the top edge of the paper, and leaves space for your Header to appear in the top margin.</p> <p> If you have a single line of text or a side heading that you want to have appear on the next page instead of at the bottom of the current page, a page break can be forced with CTRL+Enter—represented by a double line of dashes</p> <ul style="list-style-type: none"> <li>• Name and Save as <b>R250</b>.</li> </ul>
290-291		<p><b>REPORT with a FOOTNOTE</b> (Try something new—FOOTNOTE FEATURE!)</p> <ul style="list-style-type: none"> <li>• Use the WordPerfect FOOTNOTE feature (Ctrl+F7).</li> <li>• Refer to the formatting instructions for the above report (P250-251), and your formatting notes in this package.</li> <li>• Name and Save as <b>R290</b></li> </ul>

**PRODUCTION EXERCISES -- LETTERS**

Mastering Keyboarding Skills 1, Ubelacker, Guest & McConaghy

**NB: SPELL CHECK AND PROOFREAD EVERY DOCUMENT BEFORE SAVING**

PAGES	PROD. NO.	INSTRUCTIONS
173		<p>FULL BLOCKED FORMAL BUSINESS LETTERS WITH MIXED PUNCTUATION IN DISPLAY LINES</p> <ul style="list-style-type: none"><li>• Set your Left Margin at 15 spaces and your Right Margin at 15 spaces.</li><li>• Press <b>Enter</b> enough times to place your cursor on <b>Ln 9</b> (check your <b>Ln #</b>). This is the 15th line from the top of the page.</li><li>• Use the <b>DATE TEXT CODE</b> to place the current date in your letter on line 9 (Shift+F5, T)</li><li>• Enter 4-6 times after the Date and type in the mailing address (the name and address of the person the letter is going to)</li><li>• Enter twice (double space) to the <b>Salutation</b>. Type the salutation followed by a colon (: ) do not leave any spaces between the last letter of the salutation and the colon.</li></ul>

173 cont'd	<ul style="list-style-type: none"><li>• Enter twice (double space) and type the body of the letter. Single space the body of the letter, use <b>AUTOWRAP</b> at the end of the lines (do not press enter); do <b>NOT</b> Tab the first line of each paragraph; press <b>Enter twice</b> (double space) to start a <b>new paragraph</b></li><li>• Enter twice (double space) to the <b>Complimentary Closing</b>. Type the closing, capitalizing only the first letter of the first word, e.g.: <b>Yours truly</b>, and follow with a comma.</li><li>• Press Enter 4-6 times and type the <b>Signature Block</b>.</li><li>• Press Enter twice and type <b>YOUR INITIALS</b>, you are the typist -- do not type the initials that are in the textbook.</li><li>• Read all letters carefully, if there are any references to <b>ENCLOSURES (or attachments)</b>, Enter twice after your initials, and type in the <b>Enclosures</b> notation.</li><li>• Your letter should look similar to the sample you are typing on page 173, <b>but</b> the lines in the <b>body of your letter may not be exactly the same because you are using AUTOWRAP!</b></li><li>• Name and Save as <b>L173</b></li></ul>
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## INFORMATION PROCESSING

### Word Processing I (INF103)

189	1	<p>FULL BLOCKED FORMAL BUSINESS LETTER WITH MIXED PUNCTUATION IN DISPLAY LINES</p> <ul style="list-style-type: none"><li>• Complete the letter following proper formatting rules</li><li>• Name and Save as <b>L189-1</b></li></ul>
201	2	<p>FULL BLOCKED FORMAL BUSINESS LETTER with ENUMERATIONS</p> <p><b>NB:</b> This letter is not in proper letter format, and there are missing letter parts. Refer to page 200 for an example of a properly formatted letter.</p> <ul style="list-style-type: none"><li>• Follow the formatting rules for FULL-BLOCKED letters with MIXED PUNCTUATION and formatting rules for ENUMERATIONS within the letter (setting a tab and using the INDENT key F4)</li><li>• Name and Save as <b>B201-2</b></li></ul>
216	2	<p>FULL-BLOCKED FORMAL BUSINESS LETTER</p> <ul style="list-style-type: none"><li>• Type this letter using proper format and including any missing letter parts. Read the letter carefully. Use your own initials and include any enclosure notations.</li><li>• Name and Save as <b>B216-2</b></li></ul>

**PRODUCTION EXERCISES -- TABLES**

TEXT: Mastering Keyboarding Skills 1, Ubelacker, Guest & McConaghy

**NB: SPELL CHECK AND PROOFREAD EVERY DOCUMENT BEFORE SAVING**

PAGE(S)	PROD. NO.	INSTRUCTIONS
		<b>NB: USE THE WORDPERFECT TABLES FEATURE FOR THE FOLLOWING EXERCISES</b>
100	1	✓ CAPITALIZE all letters in the TITLE
120	1	✓ CENTRE the headings over the columns
127	1	✓ CENTRE the headings over the columns
130	1	✓ CENTRE the headings over the columns, and SET A DECIMAL TAB for the COST column (which contains amounts of money)

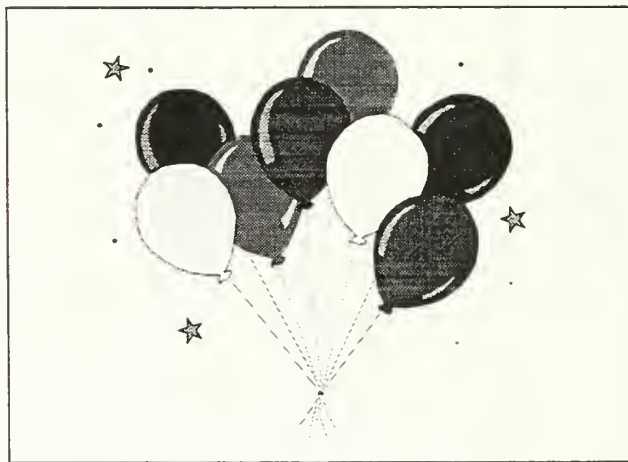
# INFORMATION PROCESSING

## Word Processing I (INF103)

EXAMPLES: REPORT

LETTER

TABLE



# INFORMATION PROCESSING

## Word Processing I (INF103)

### FORMATTING GUIDE FOR REPORTS AND ESSAYS (TITLE Ln 7)

#### General Instructions

by Rhoda Cucheran

(one blank linespace)

(subheading)

(two blank linespaces)

#### Header

(sideheading)

The **FIRST CODE** that should appear in your reveal codes when you create a report is your **HEADER** code. Reports have **HEADERS** which are **SUPPRESSED** for the first page, and which contain the **TITLE** of the report typed at the **LEFT MARGIN** and the automatic **PAGE # (Page ^B) FLUSH RIGHT**. When you create a header, you are temporarily placed in a header editing screen. This is where you type the information that you want to appear in your header, the **TITLE (left flush, all capital letters)**, and the **automatic page numbering code (Page ^B)**. Press **ENTER ONCE** after typing in the page code in order to create a larger space for your header.

#### Suppressing headers for the first page

**EXIT (F7)** back to the Page Format Menu in order to **SUPPRESS** the header for the first page. You "suppress" (do not have it print) your header because you do not want both a header and a title on the first page. The choice you make from the suppress header menu is usually the first one, to suppress all headers, footers and page numbers. Even though you suppress the header for the first page the second page will automatically be numbered Page 2.

# INFORMATION PROCESSING

## Word Processing I (INF103)

### Report Title

(sideheading)

The **TITLE** of the report is typed in **ALL CAPITAL LETTERS**, and centred on the first page at **Ln 7** on the monitor Line indicator. If you have a subtitle, double space (leave one blank linespace) between the title and the subtitle. **TRIPLE SPACE** down to the body of the report.

### Body of the Report - Linespacing

Before starting to type the **BODY** of your report, set your linespacing to **2 (for double spacing)**. You will see instructions in typing books that require you to triple space before sideheadings and double space the rest of the report. You have a choice--you may switch back and forth between triple and double spacing, or you may triple space after the title and double space the balance of the report.

### Body of the Report – Margins

The **LEFT AND RIGHT MARGINS** are the default settings of **10 Left and 10 Right**. The first line on page 2 of the report, and on all subsequent pages, is typed at **Ln 1** on the monitor line indicator. Autowrap

Use **AUTOWRAP**, that is, as you type the body of your report let the words wrap at the right margin. Autowrap is indicated by the [SRt] code in **REVEAL CODES**. Only press enter when you want to start a new paragraph, enter is represented in reveal codes as [HRt]. Paragraphs are tabbed in 5 spaces.

# INFORMATION PROCESSING

## Word Processing I (INF103)

### Page Breaks

WordPerfect inserts page breaks automatically as the pages are filled. Reveal codes displays automatic page breaks as [SPg]. These page breaks are displayed on the edit screen as single lines of dashes. If you choose to force a page break, you can press **CRTL+Enter**, which puts the code [HPg] in your reveal codes.

The **BOTTOM MARGIN** should remain set at 6 linespaces (1") for all pages. Text will automatically adjust to fit the pages.

### Quotations and Special Displays

Single space all special displays, such as subheadings that take two lines, footnotes, enumerations or listings. Single quotations are placed in quotes (" ") within the double spaced text, as shown here. "This is a very short quotation. It has three or fewer short lines and is built right into the double spaces text. Quotation marks are placed at the beginning and end of the quote."<sup>1</sup> Long quotations should be single spaced and indented 5 spaces from both margins, as follows:

This is a longer quotation (let's pretend). In order to get it to **INDENT 5 spaces from BOTH margins, press Shift+F4**. The quotation will automatically wrap in five spaces from both the left and the right margins. This type of quotation does not have quotation marks around it.<sup>2</sup>

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<sup>1</sup>Abernethy, John, Quotations for Reports, Ramdon House, 1929, p.234

<sup>2</sup>ibid., p.432



# INFORMATION PROCESSING

## Word Processing I (INF103)

### Enumerations

Use the **INDENT (F4)** key for enumerations, and set the tab for Absolute 14, this places your indented text 4 spaces in from the left margin.

1. This is an enumeration. The number appears at the left margin and the text starts in 4 spaces from the left margin. The enumeration is single spaced. If you have more than one enumeration, double space (leave one blank linespace) between them.
2. Like this.

### Footnotes

When creating a report, references are made to other textbooks, articles, etc., and these have to be acknowledged. At the end of a quotation, or a reference, you create a **FOOTNOTE** by pressing (**Ctrl+F7**), **F** (footnote), **C** (create). This puts a footnote number in your document and also the same number in a footnote editing screen in which you enter the author, name of reference book or article, publisher and page number as well as any other information for the reference. When you have finished entering the footnote information, press **F7** to go back to your document.

You will see a footnote number, but no footnote unless you **REVEAL YOUR CODES**, at which time you will see the "NOTE" at the "FOOT" of the page--thus the name "FOOTNOTE".<sup>3</sup> I have created this footnote as an example (you won't find the book).

The nice thing about the footnote feature is that if you change your report and the footnote reference ends up on a different page, the footnote follow and appears on the same page automatically. If you have several footnotes in your document, they will automatically increase in number. If you delete one of them, they will be automatically renumbered.

### Tab/Indent Keys

**BEWARE** of the differences between the terminology **TAB** and **INDENT (F4)**. Textbooks often refer to "indenting" five spaces when in fact they want you to **TAB** in five spaces.

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<sup>3</sup>Cucheran, Rhoda, FOOTNOTES ARE FUN, CEC Publishing company, 1994, p.2000

## INFORMATION PROCESSING

### Word Processing I (INF103)

Pressing **TAB** places your cursor at an advanced **Position** horizontally for the first line only, the balance of the lines wrap back to the original left margin.

Press **TAB** once at the beginning of each new paragraph to start the first line of text 5 spaces in from the left margin, and to leave the balance of the text at the default left and right margins.

Pressing **INDENT (F4)**, will place a new temporary left margin at the position indented to, and all lines will wrap to this new left margin until you press the **ENTER** key. Text will then again start at the original left margin.

Use the **INDENT (F4 and Shift F4)** key for quotations and enumerations.

#### Base Font

Word processing programs have different **FONTS** (type size and appearance) available. The default font is usually **10 pitch (pica)**, that is, it creates 10 letter spaces per horizontal inch. e.g.:

This is Courier 12 pitch.

**This is 14 point.**

ωυχ, χ, θη,ΥΥςΥυς'Ωζ (this is Greek, 20 point printed on  
LASERJET 4mp)

If you want to get more text on fewer pages, you may want to change your **BASE FONT** selection to **12 pitch (elite)**, that is, create 12 letter spaces per horizontal inch.

If you want to place emphasis on a word, phrase, sentence or paragraph, you may choose to use another style of font, or choose **italic** from the font appearance menu.

#### Title Page

Information on the title page should be displayed attractively,<sup>4</sup> usually **centred on the page**. It should contain the **name of the report** or essay (in all uppercase -- capital letters), the **name of the writer**, and the **date the report was typed**, with this information usually being double spaced, and a **HARD PAGE BREAK (CTRL+ENTER)** placed, at the end of the last line on the title page.

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<sup>4</sup>Ibid., p.276.

# **INFORMATION PROCESSING**

## **Word Processing I (INF103)**

BE CREATIVE!!! For effect, you may want to use the **BOLD** or **UNDERLINE** features; change the **FONT SIZE** to large, or use other special features such as **GRAPHICS** which are available to you through your word processing program.

# INFORMATION PROCESSING

## Word Processing I (INF103)

Example:

(BUSINESS LETTER LETTERHEAD)

*(Left and Right MARGINS are set at 15)*

January 21, 1994

*(DATE LINE is on Ln 9)*

*(4-6 blank lines between  
the DATE and INSIDE ADDRESS)*

Ms. Renata Jacot  
5703 Dalton Drive N. W.  
Calgary, Alberta  
T3A 1C4

*(INSIDE ADDRESS includes  
the name and the address  
of the person the letter  
is going to.)*

*(one blank linespace)*

Dear Ms. Jacot:

*(SALUTATION)*

*(one blank linespace)*

In response to your recent request, we are pleased to send you a copy of our article entitled "Exterior Painting, The Quick Home Remedy".

*(BODY of LETTER)*

*(one blank linespace)*

Our Group Merchandising Department prepared this article for consumers. It contains many helpful suggestions on choosing the right paint and tools for the job, preparing the surface to be painted, etc.

*(one blank linespace)*

Please do not hesitate to call your local Beaver store, or to write our Group Merchandising Department at the above address if you require additional information.

*(one blank linespace)*

Yours very truly,

*(COMPLIMENTARY CLOSING)*

*(4-5 blank linespaces for  
handwritten signature)*

Dianne C. Warnick  
Press Officer

*(SIGNATURE BLOCK  
Name and title of person  
sending the letter)*

*(one blank linespace)*

rc

*(INITIALS of typist -- your initials)*

*(one blank linespace)*

Enclosure

*(include an ENCLOSURE NOTATION  
at the very end of the letter,  
after the initials, if there is  
reference within the text of the  
letter indicating that there is an  
enclosure -- an invoice, check,  
catalogue, etc.)*

## INFORMATION PROCESSING

### Word Processing I (INF103)

TABLE Example:

SIDEWALK SALES SPECIALS		
<u>Store</u>	<u>Special</u>	<u>Price</u>
Woodwards	Braun Silencio Dryer	\$ 25.99
The Bay	Sony Walkman WM-F46	129.88
Shoppers Drug Mart	Magnetic Photo Album	4.77
Pet Fair	Cockatiels	59.80
Hakim Optical	Foster Grant sunglasses	12.00
Sears	Canon SolarCalc	24.66





[illegible]

C





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